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ABSTRACT

This "toolkit" provides a process by which institutions can identify and use information resources to enhance the experiences and outcomes of first-year students. The toolkit contains a "Technical Manual" designed for use by the technical personnel who will be conducting the data audit and associated analyses. Administrators who want more information about the data audit may also be interested in the manual. "The Administrative Rationale" is a booklet designed for administrators who need to know the basic premise and a general overview of the data audit process in order to champion it on campus. A CD-ROM is included. This CD contains the complete Technical Manual and the standard reporting templates for the Data Audit and Analysis. A three-ring binder is part of the kit. This binder contains the manuals and holds the CD-ROM. The templates in the Technical Manual can be easily copied from the binder. A leaflet, "What Is Happening with First Year Students," describes the toolkit and its constituent parts, and outlines kit use. (SLD)

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A Data Audit and Analysis Toolkit to Support Assessment of the First College Year

National Center for Higher Education Management Systems

January 2003

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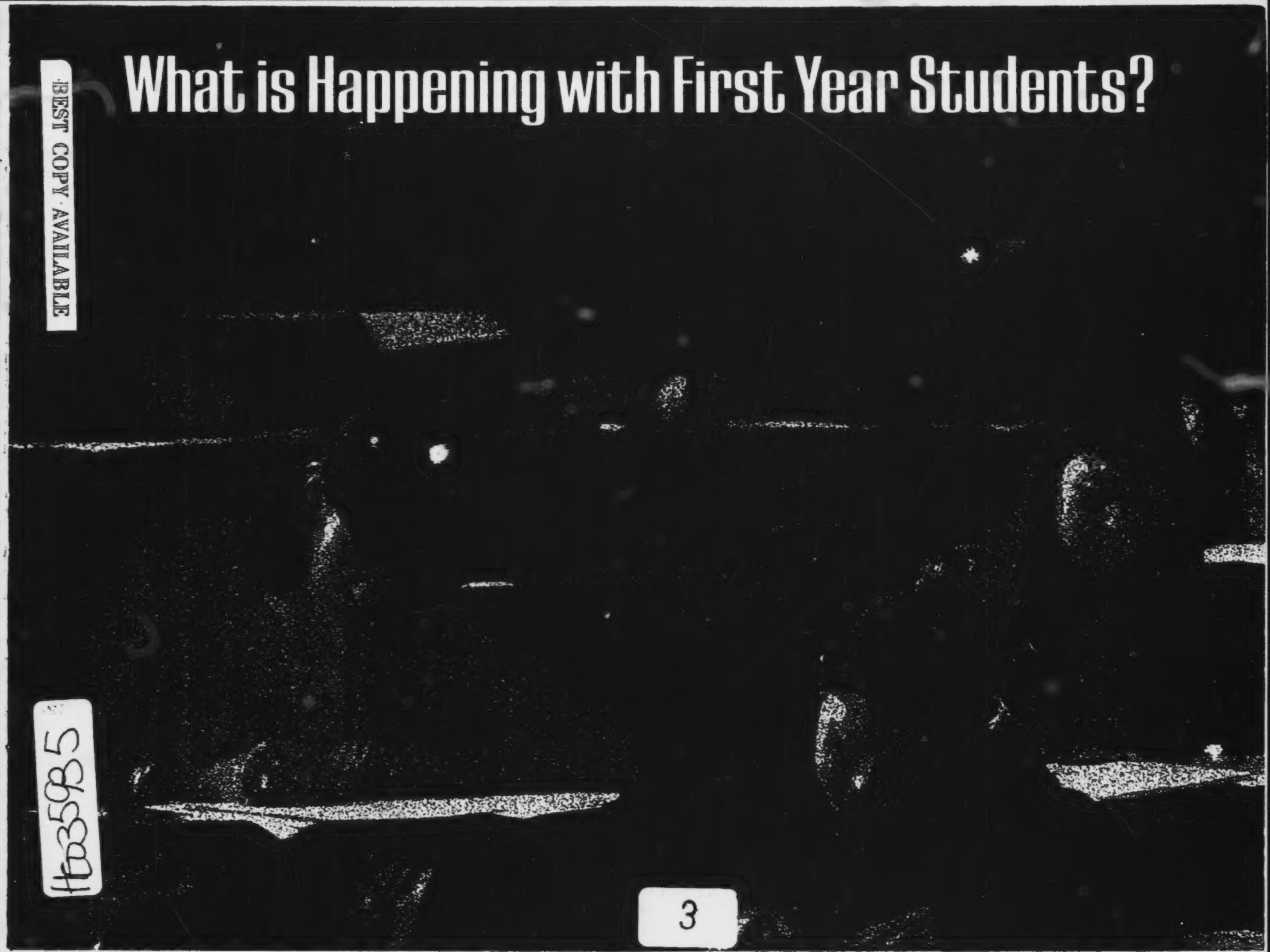
What is Happening with First Year Students?



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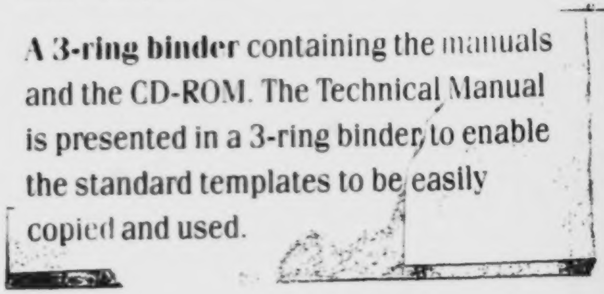
The Toolkit includes:

The Technical Manual: designed for use by technical personnel who will be conducting the data audit and associated analyses; administrators who want more in-depth information about the data audit may also be interested in this document.

The Administrative Rationale: designed for administrators who need to know the basic premise and general overview of the data audit process in order to champion it on campus.

A CD-ROM which contains the complete Technical Manual, including all data element lists and the standard reporting templates for the Data Audit and Analysis.



A 3-ring binder containing the manuals and the CD-ROM. The Technical Manual is presented in a 3-ring binder to enable the standard templates to be easily copied and used.

Karen Paulson, Senior Associate,
NCHEMS
Co-coordinator of project and
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Mike Siegel, Research Associate,
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A Data Audit and Analysis Toolkit To Support Assessment of the First College Year

The Data Audit and Analysis Toolkit is intended to help those responsible for planning and implementing first-year programs and services better understand the student experience during this critical period.

The idea for the Toolkit grew out of a strong conviction that colleges and universities typically "don't know what they know" about the first year of college. Most institutions have a lot of data about first year students. But these data are frequently collected by different offices for different purposes and are not usually harnessed in meaningful ways by faculty and staff to paint a comprehensive picture of what is happening with first year students.

The Toolkit provides a process by which institutions can identify and use information resources to enhance the experiences and outcomes of first-year students.

All colleges and universities should consider conducting a data audit with regard to the first year of college in order to accurately assess the implementation and impact of the first year on students, faculty, and staff. If an institution chooses, data audits can be expanded to include the entire institution and data about students at all levels.

The Data Audit and Analysis Project was a joint effort of the Policy Center on the First Year of College, located at Brevard College, NC, and the National Center for Higher Education Management Systems (NCHEMS), and was generously supported by grants from The Atlantic Philanthropies and The Pew Charitable Trusts.

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Administrative Rationale

Karen Paulson

Supported by The Pew Charitable Trusts and The Atlantic Philanthropies

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A Data Audit and Analysis Toolkit
To Support Assessment of the First College Year

Administrative Rationale

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2003

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FOREWORD

The Data Audit and Analysis Toolkit is intended to help those responsible for planning and implementing programs focused on the first college year to better understand the student experience during this critical period. The idea for the Toolkit grew out of our strong conviction that colleges and universities in the country typically "don't know what they know" about the first year of college. Most institutions have a lot of data about first-year students. But these data are frequently collected by different offices for different purposes and are not usually harnessed by faculty and staff to paint a comprehensive picture of what is happening to first-year students. The Toolkit provides a way to begin exploiting these hidden information resources to enhance both experiences and outcomes for students in their first college year.

While the notion of a "toolkit" may at first seem mundane, we view this effort in the light of a larger vision provided by Russell Edgerton, Director of the Pew Forum on Undergraduate Learning. When Russ was leading the education grant-making program at The Pew Charitable Trusts, he inspired and funded a remarkable array of improvement initiatives for undergraduate education. Some of these, like John Gardner's work in the Policy Center on the First Year of College, were intended to directly improve institutional practices. Working in Russ' words "from the inside out," they were designed to change the way colleges and universities do business by applying the best of what we know about what helps students learn and succeed. Others, like Peter Ewell's work at the National

Center for Higher Education Management Systems (NCHEMS) on accreditation and public accountability, were intended to shape the broader conditions within which higher education institutions do their work. Operating "from the outside in," they were designed to change public conversations about "quality" in higher education, and to create and align external incentives for institutions to act deliberately to improve undergraduate education. Running through both was the common theme of taking active, collective responsibility for student learning and success. The Toolkit is but one of many initiatives advanced in this spirit by the Policy Center on the First Year of College—which is itself one of some forty individual projects that are now members of the Pew Forum on Undergraduate Learning. Though the language of the Toolkit is of data elements and analysis, a common vision of success and improvement inspired its creation and should remain foremost in our minds.

The specific idea for the Toolkit came up in a speech Peter delivered at John's invitation to the National Forum on Assessment of the First College Year, held at the University of South Carolina in February 2000. Peter's central theme in this talk was that college officials usually have only limited understanding of the "lived experience" of first-year college students—the often highly personal events and milestones that may make the difference between leaving an institution and sticking it out. With better understanding, educators could establish better policies, build better programs, and make better decisions. A second key point Peter made was how different and complex these "lived experiences" turn out to be. Behind the "averages" of most statistics are myriad real individuals—who come to college with different expectations and abilities, and who interact with the institution in distinctive ways. The same program may thus have very different effects on different kinds of students, and we establish "generic" programs at our peril.

Understanding the diverse experiences of students in their first college year demands better information than most institutions can currently lay their hands on. A good first step is to identify, inventory, and round up the data that your institution already has about first-year students. Capitalizing on NCHEMS' experience in conducting "data audits" of this kind, we enlisted the help of ten pilot institutions to help us try out the concepts embodied in the Toolkit. Karen Paulson of NCHEMS took the lead in drafting the document and incorporating the lessons learned from the pilot institutions. Mike Siegel of the Policy Center did yeoman service in recruiting pilot schools and in coordinating the review and implementation process. Based on the experiences of these pilot participants, institutions can benefit significantly from taking stock of their existing information resources on the first year of college. Any strategy for improvement, though, should utilize multiple measures in addition to the student-record information that the data audit will reveal. Prominent candidates for such additional measures are two data-collection approaches also underwritten by Pew—the National Survey of Student Engagement (NSSE) and the joint Policy Center and UCLA Higher Education Research Institute's survey, Your First College Year. But whatever the approach taken, institutions should be as proactive and creative as they can be in seeking multiple sources of information about how students experience and negotiate their critical initial encounter with college.

The information that results from this exercise has many uses. Most important, of course, better understanding can lead to program improvement. Specific knowledge of what works, for whom, and under what circumstances can help those responsible for first-year programs to design better interventions and experiences, tailored particularly to the needs and characteristics of different kinds of students. The same kind of information can help educators evaluate the effectiveness of these interventions and, if they are proven effective, can help them argue for continued funding in those tight budget years that seem to be all too common these days. Building the databases needed to understand the first year of college also positions institutions to gradually extend the coverage of their information resources to address the entire undergraduate experience. Concentrating initially on information to improve first-year success can thus address a prominent problem faced by many colleges and universities while it simultaneously provides the foundation for a more comprehensive campus assessment effort.

But most important of all as you begin to use this Toolkit is to remember the original vision: increasing the success and academic performance of the diverse array of students who attend our many institutions. They and the public depend on us to provide the effective academic programs and support services that can help them fulfill their rich and unique potentials.

Peter Ewell and John Gardner

ACKNOWLEDGEMENTS

The National Center for Higher Education Management Systems wishes to thank the Policy Center on the First Year of College, located at Brevard College (NC), for their collaboration on the First Year Data Audit and Analysis Toolkit Project. We would also like to acknowledge The Pew Charitable Trusts and the Atlantic Philanthropies for their generous support of the project.

Ten institutions participated in the pilot study of the Toolkit. Individuals from Augustana College (IL), The University of Minnesota-Duluth, Ohio University, Northeastern State Technical and Community College (TN), The University of Texas-El Paso, University of Cincinnati, Lynchburg College (VA), Blue Ridge Community College (VA), Santa Fe Community College (FL), and Washington State University gave countless hours to implementing data audits on each of their campuses. They read and gave useful comments on draft versions of the Toolkit and kept track of the opportunities and pitfalls they encountered while conducting their data audits. As a result of their input and comments, this Toolkit is a much stronger and more understandable document.

The Policy Center on the First Year of College partners, John Gardner, Betsy Barefoot, Randy Swing, Marc Cutright, and Mike Siegel, helped shape the Toolkit through their comments on draft versions, discussions of potential areas for strengthening or trimming, and their support for the project all along. Special recognition must be given to Dr. Michael Siegel at the Policy Center on the First Year of College. During the Toolkit's development, he collaborated at every stage: editing early drafts, presenting conference sessions about the Toolkit, answering questions about data audits, and supporting it through to completion. Thanks, Mike, you're the best!

NCHEMS colleagues Peter Ewell, John Clark, Linda Keep, Patrick Kelly, Clara Roberts, and Paula Schild read drafts of the Toolkit and gave invaluable editorial suggestions.

INTRODUCTION

Why a Data Audit?

The basic objective of a data audit is to identify and inventory data sources and needs across the campus. Information derived from the audit can then be used to design and create a flexible analytical database suited to conducting a range of analyses about the first year of college on an on-demand basis. Put simply: a data audit allows an institution to periodically and systematically take stock of, and then mobilize, its data resources. All colleges and universities should consider conducting a data audit with regard to the first year of college in order to accurately assess the implementation and impact of the first year on students, faculty, and staff. If an institution chooses, data audits can be expanded to include the entire institution and data about students at all levels.

A fundamental shift of perspective is required to assess the implementation and impact of the first year. Determining "what happened" and "what mattered" during that year involves moving from a cross-sectional to a longitudinal perspective. Data contained in live transactional databases such as admissions or registration systems, by their very nature, change every day. Therefore, using such data directly to examine students and their behavior analytically has many drawbacks. Instead we need to capture "snapshots"—that is, freeze the data, containing carefully defined subsets of these data at periodic intervals and archive them for later analysis. These subsets of data can be used in combination to provide a model of student movement through the curriculum and institution. Determining which particular data elements to capture in this manner—and where they can be found—is a primary objective of the data audit. Often data are found organized in databases by type of data or survey or survey administration. What we really want for analysis, though, are data organized by *student*—analogous to a transcript that assembles data about what happens to them *over time*. Data of this kind enable us to investigate the first-year student experience to examine such items as patterns of retention and interrupted enrollment, the order in which courses are taken and completed (or dropped), and any association between academic success and participating in particular kinds of programs or interventions.

Conducting a data audit and creating a database, however, are not ends in themselves but activities in an ongoing process, designed to enable campuses to more effectively understand and improve the experiences of their students in the first year of college. Examining patterns of student behavior and the effectiveness of first-year programs, therefore, is as much a matter of attitude as it is of technique. A key point here is simply the commitment to improve. Institutional commitment, supplemented with the flexibility and latitude to make changes in first-year programs and activities, will make a difference to students. Individuals involved in first-year-of-college programs should be continually encouraged to ask empirical questions about performance and effectiveness, and to back up their opinions and anecdotes with facts. It is appropriate to ask: "Is this an empirical question that can actually be answered and supported with some data?"

This Toolkit is based on the premise that it is important to conduct a data audit and data analyses on the entire first year of college. This requires bringing together data already gathered and used, as well as data that are collected and unused, to get a holistic understanding of the first year of college, rather than focusing on separate activities, experiences, and classes. The Pew Charitable Trusts and The Atlantic Philanthropies generously supported the Policy Center on the First Year of College and the National Center for Higher Education Management Systems as they developed the documents and conducted the pilot study for the Toolkit. A call for participation in the pilot study yielded nineteen applications. From these, staff chose ten institutions to represent a range of institutions: Augustana College (IL), The University of Minnesota-Duluth, Ohio University, Northeastern State Technical and Community College (TN), The University of Texas-El Paso, University of Cincinnati, Lynchburg College (VA), Blue Ridge Community College (VA), Santa Fe Community College (FL), and Washington State University. Input from this diverse set of institutions has strengthened the Toolkit and made it more applicable in a variety of settings.

The Administrative Rationale of the First Year Data Audit Toolkit is designed for use by academic affairs or administrative affairs administrators in order to build an argument for conducting a data audit on campus. The Administrative Rationale begins with a general overview explaining the importance of a data audit focused on the first year of college. Its next section briefly outlines how to foster a culture of evidence on campus and some tips for creating a "data-based dialogue" with various campus constituencies, followed by an outline of what is involved in conducting a data audit. The companion Technical Manual is for both administrators who want to know more in-depth information about data analyses. In addition to providing a rationale for the data audit, the Technical Manual also includes a set of recommendations for a "common core" of data elements that institutions should consider assembling and maintaining in order to conduct analyses of the first year of college. This section is followed by a short discussion of the construction of longitudinal student databases. Finally, the Technical Manual concludes with the kinds of data analyses that might be used to illustrate what is happening in the first year of college, and a range of standard reporting templates are provided as an associated appendix.

CREATING A CULTURE OF DATA USE

Conducting a data audit and creating a database for analysis are not ends in themselves but activities in an ongoing process designed to enable campuses to more effectively understand and improve the experiences of their students in the first year of college. Examining patterns of student behavior and the effectiveness of first-year programs, therefore, is as much a matter of *attitude* as it is of technique. A key point here is simply the desire to improve—and the flexibility and latitude to make the kinds of changes in programs and activities that will make a difference. Campus leaders need to:

- Foster this attitude continually,
- Allow people "in the trenches" the discretion to change what they do,
- Encourage active and ongoing participation of the faculty, staff, and students from across the institution,
- Encourage as much use of public records and open access as is possible, given confidentiality guidelines,
- Support institutional faculty, staff, and administrators with data and appropriate resources, and
- Visibly celebrate their efforts and successes.

A second key point is to remember that the "right" things to do during the first year of college are not just matters of opinion and debate, but can be investigated concretely with real data. As a result, all people involved in first-year-of-college programs should be continually encouraged to ask empirical questions about performance and effectiveness, and to back up their opinions and anecdotes with facts. In other words, whenever somebody is tempted to assert, "X is happening" or that "Y is the case," (s)he should always pause to consider, "Is this an empirical question that can actually be answered and supported with some data?"

When seeking to build a culture of data use on campus, it is also important to bear in mind the many different ways in which people use information. Most researchers or institutional analysts tend to adopt the rational perspective on data use, which assumes that those individuals running programs want information to make decisions. And, indeed, that is often the case. Real decisions must be made in first-year programs about such matters as whether to continue with particular program components, how much to invest in various activities, and how to establish priorities for serving specific types of students. It is equally important, though, to be aware that information serves a variety of *other* functions in any organizational setting. Among the most prominent of these are:

- Problem Identification. Sometimes data are useful simply to signal the fact that a problem exists that needs to be further investigated. In this regard, establishing statistical indicators may well be a profitable course of action. Monitoring indicators over time (e.g., annually, from term to term, etc.) can reveal the extent to which progress is being made in improving performance, or it can chart important changes in student behaviors or conditions. Graphic or visual displays of such information are often useful for problem identification because they can quickly be scanned for anomalies. For the first year of college, for example, useful statistical indicators might include:
    - ✓ First-to-second-term persistence (reenrollment) rate,
    - ✓ Fall-to-fall reenrollment rate,
    - ✓ Percent of first-year students in academic difficulty,
    - ✓ Percent of first-year students requiring and completing developmental work in basic skills areas (reading, writing, math),

- ✓ Number of violations of established policies for placing students into courses or prerequisite course sequences,
- ✓ Student/faculty and student/advisor ratios, or
- ✓ Percentage of courses dropped.

- Context Setting. Another prominent use of the kinds of information generated through a first-year data audit is simply to paint a broad picture of what is happening in a particular setting or for a targeted population. In contrast to problem identification, in which very specific pieces of data are used as indicators that point to an underlying condition or phenomenon, the objective here is to flesh out a situation as completely as possible using as much information as possible. An example for the first year might include an in-depth look at the experiences of male students of color, drawing on data about basic patterns of persistence and coursetaking, questionnaire data on attitudes and perceptions, and data about participation in and reactions to first-year programming. Presentation of such results usually emphasizes how the various individual pieces of data fit together to yield a comprehensive and integrated "story" of what is happening. Consistent with this emphasis, qualitative data drawn from observations and interviews are often used in conjunction with statistics—both in order to expand the portrait of experience being created and to render the presentation more "real."

- Informing Discussion. Because academic settings are highly participatory, decisions are often long in coming and discussions of opinions and options are frequently long and arduous. Concrete data are useful in such settings to focus discussion and to close off obviously unproductive lines of thinking. At the outset, for example, a concrete piece of data about a student experience or about the effectiveness of a particular program element can generate a far more focused and useful discussion of what might be done rather than a vague feeling that "something is wrong." At least as important, using data judiciously can also help guide a wandering discussion and can discipline it so that uninformed opinions are less dominant. Committees are a fact of life in the academy, and many first-year activities are governed or advised by them. Using data to frame and steer committee discussions in productive ways (away from mere anecdotal stories) can thus be especially important.

- Selling Decisions. Decisionmaking is always complex, and decisionmakers rarely make a decision *only* on the basis of formally supplied information. Additional factors will always include political climate, perceptions of potential impact, and a good deal of plain "gut feeling." Nevertheless, given this complexity, data are often useful in explaining a decided-upon course of action after the fact. This strategy helps mobilize support for the decision, and allows the decision to be easily explained to those not involved in making it but whose "buy-in" is nevertheless important. At the same time, information can be especially important in making a case to funders that a particular program or line of work is critical. While seemingly cynical, this use of information is nevertheless important in the real world of academic decisionmaking and those responsible for first-year-of-college programs ignore it at their peril.

Strategies

There are also a number of proven tactics for using information in productive ways on campus and for getting people involved in looking at data. Among the most useful are the following:

- Expectation Exercises. One of the most frequently encountered reactions when sharing a piece of information with a campus audience is, "I already knew that." This response may occur because individuals want to feel that they grasp situations fully, even though they may not have thought much about them in advance. Partly it is because the human mind is good at thinking up explanations for things after the fact—and thus not being "surprised" by them. But this reaction often gets in the way of acting on information in real-world situations. One way to counter it is, before the results are revealed, to ask those involved what they *think* the result of any analysis or data-gathering exercise is going to be. (For example, if you ask faculty at many regional state institutions what the mix of degrees granted in a year might be their answers are often heavily weighted toward the liberal arts.) This exercise makes participants think concretely about consequences and possible actions from the outset. More importantly, it provides a baseline against which the actual results can be compared, once they are distributed.

(Continuing the example, the reality of the degree mix for regional state institutions is usually heavily weighted toward business and education degrees—professional, rather than liberal arts degrees.) Differences between the forecast and the truth often provide a springboard for discussions about action implications because people are surprised and more likely to then be drawn into the discussion. See **Figure 1** for an example.

- Discrepancy Studies. Along the same lines, data are often most powerful in generating interest or in starting discussions when they are packaged around a discrepancy. Discrepancies can be of many kinds, for instance, between:

  ✓ Expectations and actuality (as above),
  ✓ Established targets and actual performance,
  ✓ Aspirations and reality,
  ✓ Standing policies and real behavior, or
  ✓ One population group and another.

  But by their very nature discrepancies tend to command more attention than just presenting a number. A particularly powerful way to start discussions about advising, for instance, is to present data on student course-taking behavior that suggest established prerequisite policies are being violated and that students are failing subsequent courses as a result.

- Beginning with a Recognized Problem. Most people are not interested in data for its own sake. As a result, it is often a challenge to build support for a campus-wide project whose sole objective appears to be to improve data resources. Instead, it is usually better to begin such efforts with a presenting problem that is apparent to everybody—for example, widespread academic failure among first-generation students, visible shortfalls in quantitative reasoning skills among entering students, or uneven teaching quality in multi-section courses. Obviously, such presenting problems will be different on each campus and cannot be predicted. Indeed, the "demand" side of the data audit process is often useful precisely because it unearths such examples. Once identified, much of the effort can then be packaged around the need to address such concrete, widely recognized problems rather than based on just a vague need for better data.

- Creating Public Opportunities for Discussing Data. For similar reasons, many campuses have found it valuable to create highly participatory occasions to discuss the implications of data findings. Such discussions can involve broad cross-sections of the campus community or be limited to those directly involved in running programs and are often conducted during non-peak scheduling periods in retreat settings. One public university, for example, holds a summer planning retreat each year with broad participation from faculty and program staff. At the retreat, a few key data findings are presented and participants break up into small working groups to brainstorm ideas about what might be done in response. Results of these sessions are then shared and discussed, and become action priorities for the coming year. Many variations on this theme are possible, but all involve presenting selected statistics, then gathering a group of people (including students) to discuss their implications.

- Avoiding Data Overload. Many analysts err in the direction of trying to report too much when they present findings—either in report form or in public occasions such as those noted above. Analyses should be comprehensive and thorough but it is usually better to release a few carefully chosen findings, organized around issues or problems that are important, rather than present a "data dump." Answering the inevitable questions that a limited set of findings will generate and thus initiating a "data dialogue" is the best way to get people hooked on information.

A final point about building cultures of evidence is that *action* and *follow-through* are the most important conditions of all. Few people are interested in investing in information if it is clear that nobody will act on it and that nothing will change. Conversely, one of the best ways to promote involvement is to actively demonstrate that change is intended and possible. As a result, it is frequently useful to undertake reasonably small projects at first, where follow-through can be demonstrated immediately to potentially doubting constituencies.

THE FIRST YEAR OF COLLEGE

Why Are First-Year Data Important?

The first year of college is a confusing time for students, faculty, and college personnel. Whether at a community college or at a four-year institution, multiple programs are often in place, offered to different types of students, creating multiple experiences with many different types of interactions. Cause and effect is always an issue. Determining which programs and which interactions have beneficial effects for which groups of students is often difficult to figure out. We need a lot of data, often from disparate systems or offices, collected systematically, and organized appropriately in order to conduct such analyses.

The first year is also a logical place to anchor the development of a wider institutional assessment effort. Data collected on the first year of college can be the foundation for expanded data use and analyses on the entire institutional experience as warranted. Though complex, the first year usually consists of a well-delineated set of experiences for an easily identified set of students. It is, therefore, a manageable place to start when building an evaluation capacity at any institution. Furthermore, it makes chronological sense to begin a larger longitudinal study of student experience with the first year. Once baseline data about the characteristics and experiences of an entering cohort of students are assembled, it is possible to continue to capture information about these students throughout their academic careers.

Finally, information about the effectiveness of first-year-of-college programs gives program directors an important resource to make the case for which programs to continue and target for possible expansion and which to discontinue. First-year-of-college programs often comprise politically fragile and specially-funded activities, so evaluating effectiveness is critical to proving their ultimate worth. Data must be presented in ways that facilitate discussions about future investments. From a wider perspective, such discussions may simultaneously help to develop a "culture of data use" on campus for the long term that will aid not only first-year but other activities as well.

Institutional Questions About the First Year of College

How should we analytically untangle the many elements of the first year of college and dissect what makes it work? Underlying this master question are four more focused questions having to do with:

A. What is planned for the first year of college?

B. Who is involved in the first year of college?

C. What happened (and where) during the first year of college?

D. What mattered (and why) during the first year of college?

A. What Is Planned for the First Year of College?

An initial question to be asked has to do with identifying the objectives of the first year of college at your institution. Even more basically, one might ask whether the first year of college is conceived as an integrated and intentional set of experiences that students are actively advised through and participate in. In initially establishing first-year-of-college programs, most institutions will have already answered this question in the affirmative. Given the existence of a "program," though, are its objectives clearly defined? Like learning outcome statements for a curriculum, it is important to define the objectives of first-year activities specifically in terms of:

- How *individual* students will be *different*,
- *When* that difference is expected (initially or after participation is complete), and
- What students will be *required to do* in the first year of college.

Instead of being defined for individual students in this manner, program objectives are often framed more generically in terms of what the institution will do or what the institution wants to happen for the student body as a whole, or perhaps what an institution wants to happen for an identified group of students. Defining objectives for a student body as a whole rather than for individual students should be avoided because it is far less useful in providing guidance for assessment and evaluation. Who should be involved in designing learning objectives for the first college year? Stakeholders to be involved would probably include student affairs professionals, departments and faculty teaching first-year courses, and residence hall staff where appropriate. Once objectives for the first year of college are defined, then it is necessary to clarify their meaning and implications with the groups responsible for the various activities.

A primary objective of first-year-of-college programs is to ensure continued student success. It is important to emphasize that proof of this objective is always found after the fact. It is manifested in what happens *next* for the student at the institution and within the curriculum, for example, persistence and ultimate graduation, actual levels of student performance in subsequent academic coursework, and the achievement of particular learning outcomes.

Potential outcomes for students in their first year of college include, but are not limited to:

- Developing foundational academic skills such as quantitative, writing, speaking, technology or information literacy skills.
- Learning how to "negotiate" college and the collegiate culture.

- Managing academic life and good practices such as what constitutes scholarly work and the difference between primary and secondary sources.
- Developing appropriate non-cognitive abilities and attitudes like motivation, self-worth, and respect for others.
- Learning how to balance academic work with social life, and often, family responsibilities.
- Developing approaches to critical thinking and problem solving appropriate to a variety of academic disciplines.

Each of these possible outcomes suggests a particular evaluative line of inquiry and a specific set of data sources that might be tapped. In addition, the first year of college is often a testing ground for innovative practices that might be extended throughout the college experience if they prove effective. Examples of such practices include peer mentorship and collaboration, problem-based learning, and hands-on engagement with subject matter. Given their potential wider significance, it is always wise to evaluate the impact and effectiveness of such innovations in some detail.

B. Who Is Involved in the First Year of College?

It is important to identify the specific characteristics of the students and faculty who participate in the first year of college. While we may think we know our students well, we often harbor unexamined assumptions about their backgrounds, attitudes and capabilities. For example, we will probably want to know a good deal about the following:

- Student demographic characteristics like gender, race and ethnicity, age, disability status, family background, and whether students' parents attended college.
- Previous educational experiences and achievements of first-year students.
- Student educational and career aspirations, attitudes toward attending college, and areas about which first-year students are apprehensive or expect to encounter difficulties.

- Characteristics of the faculty and staff who work with first-year students including demographics, professional background and experience, and what they expect of students.

These factors can often interact with one another in complex ways to create specific populations of students and staff. For example, knowing that at an institution the "average age of an incoming student is 25" often masks the fact that there may be two distinct populations—one of 18-year-olds and the other composed of more mature students—who are likely to behave very differently. While such issues might simply be a problem of data presentation, they can also be an "institutional myth" that could be addressed by further data disaggregation.

The key is to always remember that *real* students, faculty, and staff, who bring a broad cross-section of diverse experiences and perspectives with them to the institution, populate the first year of college. Unless we know a good deal about these experiences and perspectives, it will be hard to figure out what is going on.

C. What Happened During the First Year of College, and Where Did It Happen?

The question of what actually happened to students during their first year of college is rarely asked systematically. Instead, we tend to assume that all first-year programs were implemented as planned and that the experiences of all students were uniform. But this is frequently not the case. Some experiences are planned and explicit while others are spontaneous, amorphous, and random. An operational mantra that should therefore continually be kept in mind is, **"Adopt the student's point of view."** This essential change of lens from our perspective to the student's perspective is critical to determining what really happened to whom. It requires not "looking at" students but instead "looking through" students' eyes to determine the actual behaviors they engage in when they encounter and act out the programs we put in place, as well as what experiences they brought with them to the programs. Sometimes the only way to get the answers to such questions is to "walk the process" by putting yourself in the student's shoes and duplicating and documenting each step directly. For example, one such analysis at a large university revealed that students were often missing the first ten minutes of several of their classes simply because they could not get across campus from their last class fast enough to show up on time.

By adopting the student's perspective, most people discover that what actually happens to students in the first year depends a lot on the successful implementation of programs and courses as planned. However, few activities or programs are actually implemented as planned. Programs often show little impact when evaluated because they were never successfully implemented, not because they were inherently ineffective. For instance, if a part of a first year program centered on a particular instructional strategy (attending a ropes course or use of a new software product) that was not available until halfway through the term, that is an implementation problem. As Joan Stark, professor at the University of Michigan, has pointed out, there are always significant differences between the design, the delivery, and the resulting student experiences associated with any curriculum (Stark and Lowther, 1986). Therefore, it is necessary to look for what interfered with full implementation or what situations arose that altered the original implementation plan.

Three specific syndromes common to the implementation of any program, including those in the first college year, often contribute to this problem and should be anticipated:

- Piecemeal development of programs and program elements that do not fit together very well. Often this approach results in duplication of efforts or gaps in service that are very apparent to students but not always obvious to faculty and administrators.
- Rushing to implement any new design. This situation often introduces a good deal of unintended variation in the way programs are implemented across departments, units, or locations—resulting in uneven (or even contradictory) effects.
- Adoption of a "true believer" stance that assumes automatically that certain things *must* be effective (e.g., small classes, collaboration in all circumstances, etc.). This attitude is often an admirable characteristic of programs about which people care deeply, but unexamined assumptions about effectiveness may mask real difficulties in implementation or design.

All three syndromes suggest devoting much more attention to questioning our assumptions about first-year programs from the outset. In contrast to what you *think* might have happened, it is always wise to check these assumptions out with real data.

D. What Mattered During the First Year of College, and Why Did It Matter?

The question of impact, of course, is ultimately what we want to get to in any analysis. Hopefully first-year experiences result in identifiable and beneficial changes in behavior, attitudes, and cognitive abilities that are consistent with program goals. The analytical task associated with answering the question "What mattered?" is to look for longitudinal paths of student learning and development through the curriculum and extracurricular activities that are consistent with the individual student outcomes that you want to achieve. This task requires an essential shift of perspective from a "still photo/snapshot" view of college life to a "moving picture" perspective that emphasizes development and attainment. Doing so enables us to look for different patterns of student movement and flow through the college experience that are created by interactions among the formal curriculum, co-curricular activities, and students' own extra-collegiate experiences. Taking this perspective introduces many behavioral questions that need to be addressed, such as:

- In what order do students take particular classes and co-curricular activities, and how frequently do they participate in particular experiences?
- Do students actually follow the advice given to them in advisement, and what difference did it make?
- What kinds of experiences mattered most for what kinds of students in terms of cognitive or affective development?

Ultimately, of course, the question of "what mattered" needs to be addressed in terms of intended outcomes and program objectives—which is why it is so important to be precise about these in the first place. The first year of college may also have many unintended or unplanned consequences for students, both for the better and for the worse. As a result, it is always wise to build flexibility into databases and analyses with the expectation that the unexpected will happen.

Given these demands for evidence to document the first college year—and the failure of most institutions to systematically determine who is involved, what is happening, and what mattered in this period—it pays to be systematic about assembling data resources. Techniques for doing so are the central concern of this Toolkit. Going beyond technique, the basic mindset of questioning assumptions and of constantly posing and addressing the four basic questions discussed in this section—what, who, what happened, what mattered—will always be helpful.

THE DATA AUDIT

What Is a Data Audit and Why Do It?

> *Data Audit*: The process of identifying data resources and uses wherever they may be within an institution and gathering them into a useable information system.

The basic objective of a data audit is to identify and inventory data sources and needs across the campus. Information derived from the audit can then be used to design and create a flexible analytical database suited to conducting a range of analyses about the first year of college on an on-demand basis. Such a database is most useful if it is separated from the regular student information system kept by the registrar. By their very nature, the data contained in live transactional databases—like admissions or registration systems—change every day. Therefore, using such data directly to examine students and their behaviors analytically has many drawbacks. In order to move from a view of students based solely on glimpses at the student information system, we need instead to continue to capture "snapshots" of student data that contain carefully defined subsets of data at periodic intervals and archive them for later analyses. These analyses will often require using these "snapshots" in combination to create a "moving picture" that approximates student movement through the curriculum. Determining which particular pieces of data, or data elements, to capture in this manner—and where they can be found—is a primary objective of the data audit. A summary of data audit steps is included at the end of this section.

Put simply, a data audit allows an institution to take stock of and then mobilize its data resources. All colleges and universities should want to take this action with regard to the first year of college for the reasons presented in this document: a) "generic" programs are seldom useful for real (and therefore different) types of students; and b) factors that affect one sector of the student population may not affect another, resulting in differing implications for both policy and intervention strategies. The capability to analytically disaggregate the student population to determine what works for whom is therefore critical.

Elements of a Typical Data Audit

A data audit consists of two primary activities:

- Examining existing data sources at the institution wherever these may be found, and
- Determining those data that are most critical for evaluation, assessment, and decisionmaking needs.

These two activities can be thought of as building campuswide understanding, respectively, of the "supply" of data and the "demand" for data. Conducting a data audit thus involves identifying data sources, creating data inventories, and documenting data collection methods and routines already in place. Examining management and decisionmaking needs, in turn, requires determining schedules and formats for submitting data or information to external constituencies (e.g., accreditors or the state) and determining whether there are management needs for information that are not currently being fulfilled.

While there are many different ways to conduct a data audit, these two overarching purposes—to determine data sources and data needs—should always guide what is done. Once completed, the information gathered during the data audit can be used to help restructure current management information systems. It can also assist you in locating additional points of contact with key constituencies (students and faculty) that might be better used to collect pertinent data. Above all, results of a data audit provide the basic ingredients needed to create the database (or databases) required to conduct ongoing in-depth analyses of the effectiveness of the first college year.

Who Should Be Involved in Planning and Carrying Out the Data Audit?

A data audit can be conducted by individuals or groups, but usually proceeds under the guidance of an institutional or unit-wide committee. Participants typically consist of institutional researchers, academic planners, student affairs professionals, student advisors, faculty and administrators. In addition, it is usually wise to have different perspectives represented on any team that either conducts or oversees a data audit. Involving individuals who are directly familiar with particular data sources because they use them every day—like people from the registrar's office or institutional research—is always beneficial. It is also useful to involve some people who are entirely removed from data processes—for example, some student advisors, faculty or administrators. Such individuals will often benefit the data audit by bringing fresh perspectives to bear on the process, and they will benefit directly from knowing how particular kinds of data are kept at the institution. At the same time, they will acquire greater sensitivity to the fact that the information demands that they often make can be technically challenging or, under current conditions, impossible to meet. Also, those individuals who gather and maintain data will see that their information is important and will be used by others; therefore, they may make more of an effort to keep their data well maintained.

The person or persons chosen to lead the committee should have broad support on-campus, particularly from upper-level administrators, and have a clear understanding of the purpose of the data audit and analyses for the first year of college. Often institutions have co-chairpersons—one with strengths in either academic or student services and the other with strengths in technical areas.

When Should A Data Audit Be Done?

Data audits are usually done on the occasion of some other major activity. These occasions can include (but are not limited to) accreditation self studies, consideration of new transactional systems (notably student systems, but also personnel systems), when building a data warehouse or data mart, or when new assessment personnel, institutional researchers, or first year coordinators are hired. Although many institutions find it useful to conduct a data audit as a part of or in support of these larger activities, it is not necessary to do so. A data audit can be done just because it seems like a good time to find out what data exist on campus and where they are located. Having said that, a data audit does not need to be conducted every year. It often works out that a three- or five-year cycle is sufficient. Among pilot institutions, universities preferred a 5-year cycle for data audits, and community colleges, because circumstances change more frequently there, preferred a 3-year cycle. Subsequent data audits can use results from the first data audit as a foundation.

The Right Attitude

A fresh perspective and an open attitude are important when people conduct a data audit at an institution with which they may be well acquainted. One advantage of having internal personnel carry out the audit is that they will already know many of the vagaries of existing systems. There can be disadvantages to using "insiders," though, including blindness to the existence of unofficial data, unwillingness to listen to other viewpoints, and an inability to probe deeply and consistently to determine whether data are defined differently in different places in the institution. Those involved in data audits should therefore constantly monitor their own assumptions and viewpoints to avoid these pitfalls.

Similarly, conducting a data audit typically uncovers a range of attitudes on the part of those who collect and keep institutional data. Some will be eager to show what they have and will be happy to work with you to determine how a wider range of people on campus could better use the data for which they are responsible.

Others will be highly protective of the data for which they are responsible, and may view audit questions as a threat to their functions and independence. An audit team needs to be aware that there are sometimes good reasons for this attitude. For example, free access to some data (e.g., health records or financial aid information) may violate privacy guidelines, and keepers of these kinds of data can get into trouble (and even be prosecuted) if they allow unlimited access. Others may fear that people unfamiliar with how data elements are collected, defined, and constructed will misuse the data. Still others may simply be protecting their autonomy, or covering up poor performance. In all such cases, be sure to listen carefully to their concerns, understand what really lies behind them, and make appropriate compromises.

A Note About Confidentiality

Student data are confidential. The Federal Educational Rights and Privacy Act (FERPA), also known as the Buckley Amendment, protects individually identifiable data from public scrutiny. In the course of a data audit, no individually identifiable data need to be or should be shared with others. The focus of a data audit is on the overall databases and their data elements, not on any specific individual data kept in those databases. If you are unclear of how your institution and state enact FERPA, consult with the institutional researcher on your campus. They will be well versed in what is allowed or not. No part of this data audit will require you to engage in any violations of FERPA.

The Supply Side

Official and Unofficial Databases

Keep in mind that there are often two basic kinds of databases at any institution: official and unofficial. Usually "official" data—that required for federal or official institutional reporting to the state—is centrally maintained and kept and "unofficial" data is maintained and kept by decentralized units. Many units gather data to address their own internal needs and to meet unique or special reporting requirements. At larger institutions such "guerrilla databases" are often kept in unit-level computer systems rather than in official mainframe database files. Prominent examples include advising data, assessment data, placement data, and responses to student questionnaires—either institution-wide or specific to a unit or program. Or, in the case of qualitative data, student writing samples may be kept in electronic portfolios or as hard copies kept in filing cabinets. It is, therefore, important to look especially hard for these unofficial data sources when conducting a data audit, in order to make sure that key data elements are not overlooked. To uncover such sources, visit departments and units in person to ask about what data are kept and reported to external constituencies.

Types of Data

Data are gathered by multiple units and for multiple purposes throughout an institution. An illustration of possible student services units and offices that might have data relevant to the first year of college is provided in **Figure 2**. **Figure 3** lists the types of data about first-year students and their experiences that are typically kept by the principal student services offices and units listed previously in **Figure 2**. Note that there is some duplication and overlap in this listing because it is typical for different offices at an institution to collect the same kinds of information independently. For instance, the Testing Office, as well as the English department, may keep English placement data; the Counseling office, as well as Admissions, may keep information on parents' education. Where this is the case, it is important to determine if they do so consistently and to then document any differences. Since the first year is influenced by both student services and academic affairs, a similar listing of pertinent academic affairs offices and the types of data they might collect can be found in **Figure 4**.

Note also that these lists are far from exhaustive. Not all of these data may be gathered at your institution, your institution may gather additional data, or the data listed may be collected by offices different from those listed in **Figures 3** and **4**. But with these caveats, **Figures 3** and **4** can be used as protocols for looking for particular kinds of data when conducting a data audit.

Transactional Data

A data audit will also allow you to uncover and capture transaction-based data that are regularly collected by a unit to monitor its own operations. This so-called "footprint" data is gathered from students as they move through and utilize a variety of units on campus. Examples include data on bookstore and food service usage or data on student contacts with and utilization of counseling, advising, or tutorial offices. Cataloging this kind of footprint data makes it available for wider use and analysis and may eliminate the need to collect information about utilization via surveys or other special sources. Transaction-based data also have the advantage of being more complete than survey data because they are usually available for the *entire* student population affected, reducing the kinds of sampling or response-rate problems associated with using special-purpose questionnaires. The main disadvantage of footprint data is that they may not be about the topics that really interest you. Furthermore, they are often kept in intractable or inaccessible formats and places. You will discover the degree to which this is true at your institution while conducting the data audit. Even if such data are not eventually tapped for analysis, it is important to know that they exist and whether they are being kept consistently with one another with official institutional definitions.

A data audit of the first year needs to be limited in scope. It must focus on what occurs during the first year of college. Although some people may be interested in looking more in-depth at the preadmission information such as data on first contacts, etc., that is not necessary unless an institution wants to include enrollment management data in their analyses.

Who Collects Data and Why?

The next point to determine is which units keep which data. Units and offices scattered across the institution often keep similar data. More often than not, they are unrelated to one another, cannot be linked, and may be based on slightly different definitions. Similarly, units may analyze data in different ways to achieve different ends. During the data audit each of these points needs to be documented. If you find that multiple units keep virtually the same data but collect it independently, the institution might want to consider establishing a centralized method for addressing common needs more efficiently. By doing so, consistent definitions can be used across campus and the burdens of duplicative data collection can be minimized.

Actually conducting the "supply side" of the data audit involves *physically* visiting each office or location that collects or maintains data, using **Figures 3** and **4** as guides. Directors of offices and units should be apprised of the data audit and why it is being conducted, but often it is associate directors, data analysts, or researchers in an office who know the details about data. Oftentimes, it might seem easier to send out a survey or an email inquiry with these questions, but we advocate face-to-face interviews in individual's offices—"walk throughs"—for the following reasons:

- It creates a collaborative atmosphere for the sharing of data and data sources.
- It honors office personnel and the importance of their efforts.
- It indicates an interest in office personnel and what they are doing.
- It builds a relationship with these individuals and with the office.
- It allows you to read reactions from individuals and see the office set up.
- It allows you to do immediate follow-up and collect artifacts.
- It also allows for "serendipitous" meetings and discussions about data and databases, including guerilla databases.

When you visit each administrative office, academic department, or unit, it is important to determine:

- What kinds of records, data, and databases it keeps on first year students, programs, experiences, and activities.
- How data collected are used by the unit.
- What schedules govern when data are collected, and if and when data are entered into computer systems. Extracts from live databases are often taken on the tenth day of a term and a given time period (such as one week) after the end of the term.

- What surveys it administers, to whom (all first-year students or a particular subset of first-year students), and on what schedule.
- What additional local data collection efforts it engages in with regard to first year students, courses, programs, experiences, and activities.
- What questions the unit would like to be able to answer about the first year of college. What data would be needed that are not now collected.
- What are unit staff perceptions about gaps in the data and information that they possess on the first year of college.
- The extent to which available first-year data sources and databases are underutilized, and whether unit personnel have ideas about why this might be the case.

Furthermore, while conducting the audit you need to ascertain across units:

- Whether the records, data, and database structures that these units and offices maintain differ from one another, and exactly how they differ.
- The extent to which definitions for common data elements vary across units and departments.
- The extent to which formats in which common data elements are kept vary across units and departments.

While conducting the audit, it is often helpful to collect documentation about the data that each unit controls. Artifacts or documents to consider collecting from units when you visit them include:

- The actual forms or questionnaires used to gather and record data.
- Data element dictionaries.
- Data element definitions (if not included in the data element dictionary).
- Database structures and file formats used to archive data (for example, are data kept on CD-ROMs, in mainframe files, in Access databases, in old 80-character length fields).
- Notes on specialized software needed, if any, to access and use data.

Notes about the actual coverage, timing, and completeness of the data should be organized by type of data, following the logic of **Figures 3** and **4**. Forms, artifacts, and documents should be numbered and keyed to the text of the data audit report.

How Complete Are the Data?

The completeness of the data gathered by the institution and its individual units is critical. Data on a given topic are sometimes collected for only a *portion* of the entering student body—from those who attend orientation, who came to class on a particular day, or whose admissions files came through the regular admissions process, for example. It is, therefore, important to follow up with units about completeness by asking them the following types of questions:

- Are individual students required to fill out and answer all of the data elements on every form—either paper or online—such as admissions, registration, and housing forms? Or, when applicants fill out admissions forms are they told to fill out only certain information on the sheet?
- Are data elements transferred from paper or online forms into databases? Who does this? Do data entry clerks do it? Are the forms scanned automatically? Does the system load online entries directly as data elements into a database? What is the schedule for accomplishing these entries? If data entry is done by hand or if forms are scanned, are critical data elements entered immediately and other, less critical data elements entered later in the term when there is less pressure? What happens to forms after data are entered? Do any checkpoints in the system exist to ensure that all data entry is completed?
- Are there fields that are never entered into the database at all, even though the information is supplied or forms filled out?
- Are individuals asked for detailed information on a form, but then upon data entry is the relevant data element collapsed into a "Yes/No" or other summary format?
- Are data elements entered directly into the live student information database or are they entered into an intermediate database (e.g., Access or Excel) and then loaded? What office does this?

Some institutions also find it helpful to run frequency checks—a summary of what numbers actually populate the fields and how often they each occur—of individual data elements that are not often used in order to determine directly the extent to which all students have entries and how error free these entries are. Using a simple example, a frequency check on the field listing "gender (or sex)" might contain Ms and Fs in addition to 1s and 2s. A frequency check would also give an indication of how many persons in the file had no record of their gender. Sometimes, for example, computing center personnel will say that they "maintain" a given data element but later probing will reveal the fact that nobody loads data into the field any more, or that the database fields contain unusable data.

Where Do the Data Go?

Once it has been determined which data elements each particular unit gathers, the next step is to determine where data elements go after they are collected. For each data element (or group of data elements), ask personnel in pertinent units:

- Which databases do these data elements go into? Are certain data elements put into multiple databases?
- How are these entries in other databases updated? On what schedule and who is responsible? Are old values over-written in this process?
- Are fields used for multiple purposes? Are different offices using supposedly "unused" fields for different purposes and including their own data elements and codes?
- What definitions are used for various data elements used in multiple databases?
- Who has authority over these databases?

Results of this portion of the data audit are often best documented in terms of a map or flow chart showing clearly how and when particular data elements move from point of collection to the various places where they are archived or used.

"Walking the Process"

In order to accomplish these various steps, it is frequently useful to physically "walk the process" of collecting data. One way to do this is to adopt the student's (or faculty member's) perspective and go through each step that has to be accomplished in order to complete a particular action—to register for a class, or to obtain financial aid, for instance. Determine the specific forms that students have to complete for which units across the campus in order to attain their objective. Follow up on each data element (or group of data elements) using the questions listed above.

A pilot institution cleverly combined this aspect of the data audit with their ongoing institutional commitment to service. Staff members selected actual students to go to specific offices to "walk the process" to collect data and information for the data audit as well as to gather information about how well they were treated and experience the customer service skills of the personnel in the various offices visited.

Another way to "walk the process" is from a data element's point of view. This will allow you to determine which units gather particular data elements (and identify any redundancies), which database(s) particular data elements are kept in, what definitions and categories are used in which databases, who is responsible for each data element, and who is using that data element to what end.

Supply Side Summary: What Is Important to Gather During this Process?

When gathering information about data on campus, it is important to collect as much documentation as possible about data and databases that exist. The following types of support documentation will be especially useful:

- Copies of forms, both paper and online.
- Data element dictionaries for databases.
- Data element definitions (if not included in the data element dictionary).

- Documentation on the structure of databases and the format(s) in which individual data elements are kept.
- Information on historical database files and how many years of data are available.
- Security guidelines and change procedures for all of the databases encountered. That is, who has access to the data and who has authority for updating or changing the database or its data elements?

The Demand Side

The other aspect of doing a data audit is to determine what data needs exist on your campus. This aspect is best conceived of as the "demand" side of the analysis, complementing the "supply" side represented by the inventory of existing data sources. In addition to talking with individuals about the data they collect, you will need to talk with institutional decisionmakers and other data users. Often there is considerable overlap among individuals and offices that are data users and data collectors, but do not assume that there is.

Offices, units, and individuals on campus that need to be contacted about data needs include academic affairs personnel—the provost, deans, and department heads—student affairs personnel, as well as individuals involved in accreditation studies or who must report information to state or federal officials (directors of TRIO programs or teacher education programs, for example). Examples of external reporting that may be required would be to accreditors, to state agencies, or to governing boards. When you visit these offices and units, ask them:

- Who are the office's key internal and external constituencies?
- What kinds of decisions does the office regularly make, and what kinds of information are needed (or desired) to make them?
- To whom must the office report data and information?
- What existing reports and data reporting requirements does the office have and whether it is able to fulfill them? Working backward from existing reports

and procedures, determine what data are needed and how calculations are made.

- What kinds of reporting and decision cycles are typical? (For example, grant budget cycles can run on academic years, July-June fiscal years, or even October-September fiscal years, which will affect when data are needed.)
- How current and accurate do data and information need to be?
- What is missing that office personnel deem essential to have (that is, data they need versus data they want)? Are data missing because they do not exist, or is existing information not accessible to office personnel?
- What questions should office personnel be able to answer about the first year of college?
- What are their perceptions of gaps in data and information?

Make sure to point out that even though you are asking them these questions, it does not mean the data audit will result in complete resolution of issues that are raised or that all their data desires will be met. Instead you should explain carefully that the intent is to inventory information resources and needs to help decisionmakers at the institution decide how to proceed.

Demand Side Summary: What Is Important to Gather During this Process?

Just as on the "supply side" of the data audit, it is useful to gather as much documentation as possible when you visit each site. Documents that you should gather from these offices and units include:

- Copies of recent reports that the unit has submitted using official (and unofficial) institutional and office-level data.
- Copies of data-reporting requirements, including schedules and format specifications.

Samples of the formats or methods the unit uses to analyze data (e.g., calculational routines used to compute class loads, advising schedules).

Bottom Line: Summary of Procedures for Carrying Out a Data Audit

Procedures for carrying out a data audit are summarized below. Please note, however, that while all these steps should be accomplished, it is important to be flexible in carrying out this task. Different institutions may require somewhat different approaches because of their organizational structures and politics. At the same time, some office or individual in the past (usually the Office of Institutional Research or its equivalent) may have previously accomplished much of the work included in a data audit. Where this is the case, it is useful to refer to this previously accomplished work as a starting point. Keep in mind that circumstances may have changed, there may be new office personnel, or something may have been overlooked in the process.

1. Identify offices and units across campus that gather or keep data pertinent to the first year of college, as well as those offices and units that use or report data. Emphasize that the data audit is a collaborative institutional process.
2. Contact appropriate individuals who can fairly represent the resources and perspectives of these offices and units.
3. Set up mutually agreeable times to visit these individuals *in their offices* in order to discuss data sources and data uses.
4. Approximately one week prior to visiting, send these individuals a list of the questions to be discussed and the artifacts or documents you will want to collect from them. If a particular office is only a data-source office or only a data-use unit, adjust the list of questions accordingly.
5. Conduct the site visit. Ask your questions. Clarify, clarify, clarify. Take detailed notes. Collect artifacts and documents. Where appropriate, "walk the process" by simulating the steps a student (or faculty/staff member) would take, or follow the path of a particular data element from point of collection through data entry, archiving, and use.

6. Before leaving, thank the people involved for their time and help. Invite them to contact you if they think of anything further that might be of use. Secure an agreement that should there be any follow-up questions, they would be willing to respond to them. Confirm their telephone numbers or email addresses.
7. Send thank-you notes to people you visited and interviewed; it might be appropriate to copy their managers or bosses as well.

In order to facilitate a culture of data use and information sharing on campus, consider making the findings of the first-year data audit available to the campus in the form of a brief report.

OUTPUTS OF A DATA AUDIT

After the "raw data" generated by the data audit have been assembled (interview notes or tapes or transcripts as well as artifacts documenting existing data and reports) from offices representing both data sources and data users, results should be synthesized to yield a coherent picture of data resources and the culture of data use at your campus. Many different ways of summarizing results are possible, depending upon institutional needs. In some cases, you may want to prepare a single comprehensive report on findings. In other cases, it may be more useful to organize findings around common topics—for example, lists of first year data resources and who has them, recommendations for a "common core" of data, and a report on the current culture of data use on campus. As noted earlier, it is also usually appropriate to prepare a brief summary of the project and its results for wider distribution to the campus community.

Outcomes of the pilot study fit into four categories. Institutions found that they learned lessons about a) their first-year programs, b) broad data issues, c) how to improve data audit implementation, as well as d) refinements that could better their institutional infrastructures. Examples of lessons learned for first-year programs included:

- Some institutions found that they did not have program goals for their first-year programs.

- Some were under the impression that there was more tracking of first-year students happening on campus than was actually occurring.
- They found that the data audit raised awareness about the entering-student program.
- Student engagement with services, particularly student support, was not captured on some campuses.
- A few campuses discovered that student course evaluations were not linked or kept in a database.

Examples of lessons learned about data and data use on-campus included:

- Some institutions found that they do not enter all data "resulting in loss of potentially valuable data."
- The issue was raised of who will decide which data are entered when budgets are tight and personnel are already overly busy. In fact, data may not be entered; but as processes are increasingly automated, institutions should keep in mind entering more data as it can be done.
- Initially, at one institution, staff wanted to eliminate data but by the end of the audit many wanted to gather more data.
- First generation college attendee information was often collected for only a particular population of students. The same was true for email addresses.
- At one institution, pilot project administrators discovered the value of data collection was challenged in student services areas because of the difficulty in seeing the connection between data collection and improved services.
- Data are often not coordinated, shared, or organized well.
- One institution is now going to put its fact book on the web.
- Both university and community college personnel were very cooperative in supplying needed data.
- Problems were uncovered with not storing or archiving data, having no historical data, incurring large amounts of data loss, and finding that needed data were being overwritten or purged.

- At some institutions no data element dictionary existed.
- When a college named a data element one way and another name was used for external reporting purposes, both names needed to be included in the data element dictionary to alert others to the dual name.
- At one institution, the data audit confirmed what they already knew about their data and institutional data processes for the first year of college.
- A few pilot schools encountered some resistance from the gatekeepers of the data.
- One institution found that data were available in the data warehouse, but too little training was available on how to extract useful data creating an accessibility issue.

About conducting a data audit, pilot institutions personnel found that:

- Sending out questions/request for artifacts to be collected ahead of time meant that units had them available when they came to do the interview.
- Use of worksheets aided them in the collection of information for the data audit.
- In some cases, multiple interviews were necessary with different people in offices because no single person knew what was possible.
- Results of the data audit will be used to prioritize future data needs.

Generally, pilot institutions found that the data audit:

- Uncovered questions in addition to answers.
- Identified redundancies that could be eliminated or opportunities to be studied during the next round of strategic planning.
- Will result in an institutional report back on outcomes of the data audit to the institutional management team, the President's Council, etc.
- Helped to create an institutional mindset around a total university approach—assessing our effectiveness by finding and using available data.

- Use of the word "audit" scared some people.
- Made some departments relieved that they were not being singled out for review—that this was part of a larger, institution- or unit-wide, project.
- Led to increased understanding among committee members regarding what different departments do and how they fit into the overall functioning of the institution.
- Gave people an understanding that these were issues other institutions were working on.
- Was instrumental in highlighting the need for evidence in the form of data.
- Was a way to involve faculty in data use.
- Identified the need for an institutional Data Definition Committee.
- Results were, in the words of one pilot institution administrator, "strikingly consistent. Most people expressed a frustration with the difficulties encountered in trying to get data and most people wanted access to the same data and were trying to create the same types of reports—all independently with absolutely no efficiencies of scale."

Whatever the format for reporting ultimately selected, the following outputs of the data audit should be fully described:

- Data element lists and specifications including whether it is kept in text or numeric format, where the data element comes from, when it is entered or the frequency with which it is updated, how consistent is the coding, how have different units interpreted definitions (for example, does a "0" mean zero or missing?), etc.
- File structures and extract schedules including when "snapshots" of live transactional databases are taken.
- Most common uses of data on campus.
- Common reporting formats/templates.
- Review security issues.

- Review need to establish a Data and/or Security Committee.
- Locus of responsibility for maintenance and control for different kinds of data and databases.
- Recommendations on the various forms of user training needed to facilitate use of data resources.
- Recommendations for methods and approaches for collecting needed data that are not currently collected by the institution.

In preparing to summarize the outputs of a data audit, it is helpful to be aware of and review some frequently encountered findings of such an exercise at other campuses. Among them are:

1. The need to reposition student databases to examine behaviors from the *student* rather than from the institutional point of view. It is not unusual for institutions to collect a lot of data on students and student behavior, but not to use this information to investigate questions like, "How did students act out the first year curriculum in terms of course-taking?" or "How many first-year students visiting academic skills centers did so more than once each term?" One reason for this situation is that existing databases focus on the needs of record-keepers, not information users. Therefore they are typically hard to access, hard to use, and organized cross-sectionally rather than longitudinally.

2. Opportunities to collect data more systematically using *processes already in place* and *existing points of contact with students*. There is always a tendency to invent brand-new data collection efforts every time a new information need is identified. Also, administering surveys using different methodologies across terms and years can alter outcomes and results, which can create false perceptions of change. This situation leads to students being repeatedly surveyed. The point here is to be more deliberate about taking advantage of contacts/opportunities that are already available. Examples of these include student orientation sessions at which additional surveys might be collected, placement testing, student evaluation of instruction, and face-to-face advisement sessions. Emerging technology also provides opportunities. For

example, more and more libraries, bookstores, residence halls, and student service offices are using "Smart Card" or "Card Swipe" systems to record use and attendance, creating an automatically generated record of contact and intervention for each student that can be recovered and used more broadly. Or, for students who access offices or services online, web usage statistics are another form of data to be collected. In addition, being deliberate in gathering and using data will likely reduce duplication of effort on campus and wasted resources.

3. Unclear or inconsistent definitions across units for similar data elements. This mismatch can occur in both directly extracted and locally constructed or calculated data elements. Every institution can benefit from having clear definitions for data elements and distributing documentation containing those definitions widely to everyone on campus. For example, offices may use different definitions of first-time students; some may use first-time, full-time undergraduates, others may use the entire population of first-time undergraduates, which would include both full-time and part-time students.
4. Self-reinforcing "spirals" of misperception on the part of those responsible for collecting/archiving data and those who seek to use it. A frequent finding of a data audit, for example, is that user communities have given up trying to obtain some kinds of data because of the difficulty of getting it—resulting in a perception by data communities that there is "no demand" for these data by users.

As you seek to summarize the results of the data audit on your campus, it is important to be sensitive to these common issues, and to be reassured that they are not unusual. Furthermore, by being open to suggestions, you may learn new avenues that data may be beneficial to all parties involved.

The final step is to close the feedback loop to create a true culture of data use by communicating results of the data audit of the first year of college widely and taking action based on results of the analyses.

CONCLUSION

Embarking on a data audit designed to support and improve the first year of college is a significant step for any campus. Hopefully, the data audit will lead in the direction of a more comprehensive and intentional approach to collecting and analyzing information about the first year of college. In undertaking it, we want to reemphasize some of the points made at the outset of this Toolkit.

First, always remember that "truth" lies in the variations. Real people with real differences make up the first-year population at any college, and the same is true of all our faculty and staff. So avoid being misled by averages and other "central tendency" results that are meant to apply to *all* students and situations. Instead, disaggregate the data as far as you can to uncover the many differences in experience and situation that probably exist.

Second, results of assessments and evaluations are almost always more useful in generating further questions and in stimulating reflective faculty/staff conversations than in "making judgments" about program performance. It will always be important to use available data to create occasions for further reflection and conversation about collective action, rather than employing data to point fingers and blame units or individuals for shortfalls in performance. Indeed, the metaphor of *scholarship* is usually effective in such situations: the object of evaluation is nothing more than to turn the tools and habits of systematic investigation that we were all trained to practice in our disciplines onto our own core enterprise of facilitating student success. Like scholarship in any field, the process of gathering and analyzing data about the first year of college should be open, deliberative, systematic, and ongoing—never really completed.

Third, consistent with the view that engaging in assessment and evaluation is a profoundly *educative* act, students should be involved in the process as fully as possible. The best data systems are designed not only to provide evidence to decisionmakers but also to enable feedback and intervention in individual cases. Indeed, the data audit process may uncover numerous opportunities to communicate information back to students about their own strengths and weaknesses, or to introduce such information into the advisement relationship. At the program level, moreover, student participation in the process of interpreting evaluation results is often especially valuable. For example, focus groups of students are frequently useful in helping to interpret observed patterns of student behavior or to provide in-depth commentary on survey results.

Fourth and finally, the mindset required for sustaining such projects in the long term is one of continuous improvement. Those engaged in assessing and evaluating first-year-of-college programs should always bear in mind that no matter how good things are (or you think they are), they can always be improved. Finding the ways in which this can be accomplished is about details, not about "silver bullet" solutions that try to change everything at once. Real improvements take place by identifying and addressing individual classes of problems occurring for particular types of students all over the place. The mindset that such improvement is a *collective responsibility* in pursuit of a *common goal*—student success in the first year of college—is critical to this process, as is a common store of usable information. Hopefully, this Toolkit will be of help in creating or strengthening this resource.

REFERENCE

Stark, J. S. and Lowther, M. A. *Designing the Learning Plan: A Review of Research and Theory Related to College Curricula*. Ann Arbor, MI: National Center for Research on Postsecondary Teaching and Learning (NCRPTL), University of Michigan, 1986.

GLOSSARY

Anonymity (provision for): "Evaluator action to ensure that the identity of subjects cannot be ascertained during the course of the study, in study reports, or in any other way (Joint Committee on Standards for Educational Evaluation, 1994)." "Only when the sponsor cannot identify each person's response, even momentarily, is it appropriate to promise that a response is anonymous (Dillman, 2000, p. 163)."

Confidentiality: "Answers are confidential. This statement conveys an ethical commitment not to release results in a way that any individual's responses can be identified as their own (Dillman, 2000, p. 163)."

Data: "Material gathered during the course of an evaluation that serves as the basis for information, discussion, and inference (Joint Committee on Standards for Educational Evaluation, 1994)."

Data Audit: The process of identifying data resources and uses wherever they may be within an institution and gathering them into a useable information system.

Data Element: Single, individual piece of data such as "name" or "race."

Face Validity: "The extent to which an instrument looks as if it measures what it is intended to measure (Nunnally, 1970)." "An instrument has face validity if decisionmakers and information users can look at the items and understand what is being measured (Patton, 1984)." "It is obvious, on the face of it, that the proposed procedure is the best way of measuring the phenomenon of interest (Rutman, 1984)." "Apparent validity, typically of test items or of tests; there can be skilled and unskilled judgments of face validity. Highly skilled judgments come pretty close to content validity, which does require systematic substantiation (Scriven, 1991)."

Footprint Data: Data that is gathered from a student or faculty member in the normal course of interacting with a postsecondary institution—e.g., data gathered on an admissions form, or on a form to have access to library resources.

Goal: "A statement, usually general and abstract, of a desired state toward which a program is directed (Rossi and Freeman, 1993)." "An end that one strives to achieve (Joint Committee on Standards for Educational Evaluation, 1994)."

Guerrilla Database: An unofficial database not normally known to the larger institution—e.g., database of student teacher experiences and mentors for Education students.

Information: "Numerical and nonnumerical findings, renderings, or presentations—including facts, narratives, graphs, pictures, maps, displays, statistics, and oral reports—that help illuminate issues, answer questions, and increase knowledge and understanding of a program or other object (Joint Committee on Standards for Educational Evaluation, 1994)."

Needs Assessment: "Systematic appraisal of the type, depth, and scope of a problem (Rossi and Freeman, 1993)." "...is a process for discovering facts about the functions or dysfunctions of organisms or systems; it's not an opinion survey or a wishing trip (Scriven, 1991)."

Objectives: "Specific, operationalized statements detailing the desired accomplishments of a program (Rossi and Freeman, 1993)" "Something aimed at or striven for, more specific than a goal (Joint Committee on Standards for Educational Evaluation, 1994)."

Official Data: Data reported to federal or state agencies that must be exactly replicable.

Policy Significance: "The significance of an evaluation's findings for policy and program development (as opposed to their statistical significance) (Rossi and Freeman, 1993)."

Sensitivity Analysis: The systematic analysis of the influence of various input values on the output of a model.

Snapshots: To freeze data from a transactional database by capturing it at one particular time.

Stakeholders: "Individuals or groups who may affect or be affected by program evaluation (Joint Committee on Standards for Educational Evaluation, 1994)."

Transactional Database: A live database used to conduct interactions between humans and electronic databases, e.g. registration system.

Triangulation: "The use of multiple sources and methods to gather similar information (Joint Committee on Standards for Educational Evaluation, 1994)."

Unit of Analysis: "The least divisible element on which measures are taken and analyzed (Joint Committee on Standards for Educational Evaluation, 1994)."

Unofficial Data: Data that may not necessarily be replicable.

Utility: "The extent to which an evaluation produces and disseminates reports that inform relevant audiences and have beneficial impact on their work (Joint Committee on Standards for Educational Evaluation, 1994).

FIGURES

FIGURE 1
Expectation Exercise

From *Regional State University*

RESULTS FROM
THE ACADEMIC LEADERSHIP RETREAT 2001

National Survey of Student Engagement Question:

In your experience at your institution during the current school year, about how often have you done each of the following?

	Freshmen			Senior		
	Predicted	**Ideal**	**Actual**	**Predicted**	**Ideal**	**Actual**
a. Asked question in class or contributed to class discussions	1.96	3.36	2.69	2.81	3.72	3.32
b. Made a class presentation	1.62	2.68	2.20	2.77	3.46	2.93
c. Prepared two or more drafts of a paper or assignment before turning it in	1.53	3.24	2.94	2.27	3.42	2.61
d. Worked on a paper or project that required integrating ideas or information from various sources	1.95	3.28	3.22	2.74	3.61	3.32

"Predicted" were predicted by a faculty group prior to seeing actual results.

"Ideal" were projected by a faculty group prior to seeing actual results.

"Actual" are actual student results from that institution for 2001.

FIGURE 2
Student Services for Online Learners Beyond the Administrative Core

The purpose of using this "web" in the Data Audit and Analysis Toolkit is to illustrate the variety, breadth of and interactions among student services on a typical college campus.

This figure is used by permission from the Western Cooperative for Educational Telecommunications Learning Anytime Anyplace Partnership project. The goal of that project is to design student services beyond the administrative core. To reach a common understanding about what was meant by student services for purposes of the project, the partners divided services needed by online learners into five clusters or suites: administrative core services, academic services, communications services, personal services, and student communities services.

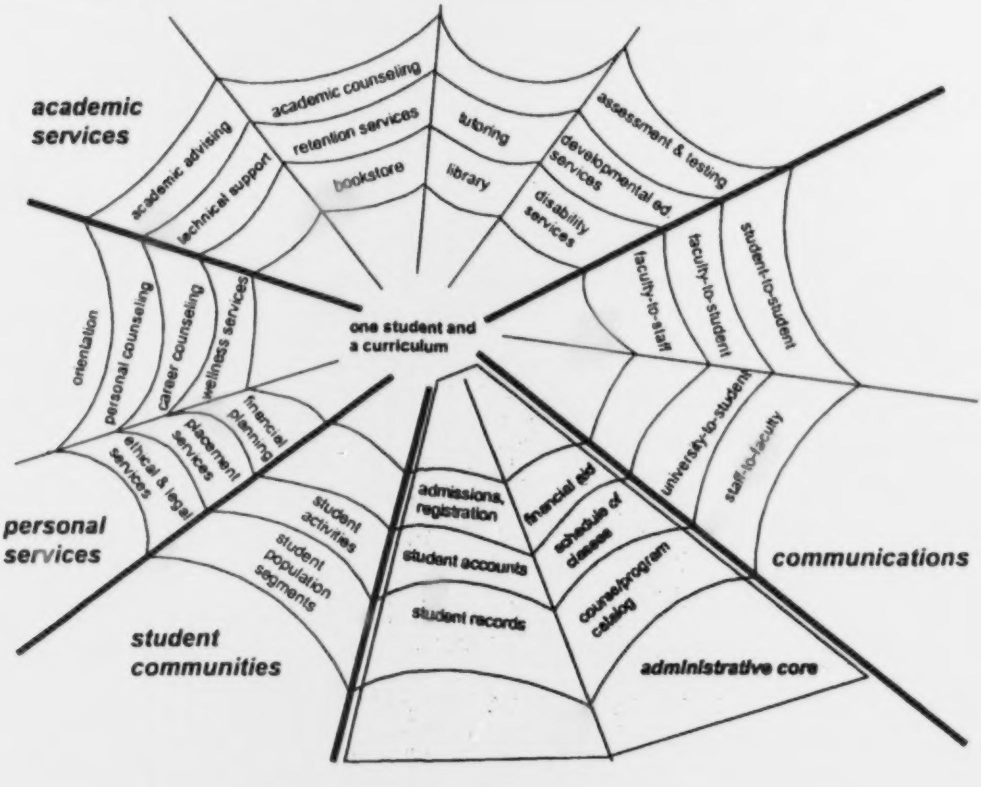
academic services
academic advising
technical support
academic counseling
retention services
bookstore
tutoring
library
assessment & testing
developmental ed.
services
disability services
one student and a curriculum
orientation
personal counseling
career counseling
wellness services
financial planning
placement services
ethical & legal services
faculty-to-staff
faculty-to-student
student-to-student
university-to-student
staff-to-faculty
personal services
student activities
student population segments
student communities
admissions, registration
student accounts
student records
financial aid
schedule of classes
course/program catalog
administrative core
communications

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FIGURE 3

Student Affairs Offices and the Types of Data They Might Keep

Academic Services

- Academic Advising
  - Academic Records/Grades
  - Academic Support Office Use by Students and Other Groups
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Scholarship/Grants
  - Service Learning
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Academic Counseling
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Housing
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Scholarship/Grants
  - Service Learning
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Assessment and Testing
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Course Information
  - Documents
  - Field Placement
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Surveys
- Bookstore
  - Course Information
  - Documents
  - Faculty/Personnel Information
  - Course Syllabi and Textbook Use
- Developmental Education Services
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Housing
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Surveys

- Disability Services
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Housing
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Surveys
- Library
  - Course Syllabi and Textbook Use
  - Documents
  - Library Use
  - Special Studies and Reports
  - Surveys
- Retention Services
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Scholarship/Grants
  - Service Learning
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Technical Support
  - Academic Support Office Use and Data
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Tutoring
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys

Administrative Core

- Admissions, Registration
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research

FIGURE 3 (cont.)

    - Placement Data
    - Registration
    - Scholarship/Grants
    - Special Studies and Reports
    - Student Information System
    - Student Life Data
    - Surveys
- Course/Program Catalog
    - Academic Records/Grades
    - Accreditation
    - Admissions
    - Course Evaluations
    - Course Information
    - Documents
    - Facilities, particularly Classroom, Computer, and Laboratory Setup
    - Faculty/Personnel Information
    - Institutional Research
    - Prerequisite Information
    - Registration
    - Special Studies and Reports
    - Student Information System
    - Surveys
- Financial Aid
    - Business Affairs
    - Financial Aid Information
    - Institutional Research
    - Scholarships/Grants
    - Surveys
- Schedule of Classes
    - Course Information
    - Documents
    - Facilities, particularly Classroom, Computer, and Laboratory Setup
    - Faculty/Personnel Information
    - Prerequisite Information
- Student Accounts
    - Business Affairs
    - Special Studies and Reports
    - Student Information System
    - Surveys
- Student Records
    - Academic Records/Grades
    - Academic Support Office Use and Data
    - Admissions
    - Assessment Data
    - Athletics
    - Course Information
    - Disability Information
    - Documents
    - Institutional Research
    - Placement Data
    - Registration
    - Scholarship/Grants
    - Special Studies and Reports
    - Student Information System
    - Student Life Data
    - Surveys

Communications

- Faculty-to-Staff
- Faculty-to-Student
- Staff-to-Faculty
- Student-to-Student
- College-to-Student

Personal Services

- Career Counseling
    - Career Placement Information
    - Documents
    - Field Placement
    - Institutional Research
    - Internships/Cooperative Education
- Ethical and Legal Services
    - Judicial Proceedings
- Financial Planning
    - Business Affairs
    - Financial Aid Information (limited)
    - Special Studies and Reports
    - Student Information System
    - Surveys
- Orientation
    - Academic Records/Grades
    - Academic Support Office Use and Data
    - Admissions
    - Assessment Data
    - Athletics
    - Course Information

FIGURE 3 (cont.)

  - Disability Information
  - Documents
  - Institutional Research
  - Placement Data
  - Prerequisite Information
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Personal Counseling
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Athletics
  - Counseling Information
  - Disability Information
  - Documents
  - Institutional Research
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Placement Services
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Institutional Research
  - Internships/Cooperative Education
  - Placement Data
  - Registration
  - Scholarship/Grants
  - Service Learning
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Wellness Services
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research
  - Learning Center Use
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys

Student Communities

- Student Activities
  - Athletics
  - Campus Ministry Participation
  - Cultural Events or Lectures
  - Documents
  - Housing
  - Membership/Participation in Student Activities
  - Service Learning
  - Sorority and Fraternity System Participation
  - Special Studies and Reports
  - Surveys
- Student Population Segments
  - Athletics
  - Campus Ministry Participation
  - Cultural Events or Lectures
  - Documents
  - Housing
  - Membership/Participation in Student Activities
  - Service Learning
  - Sorority and Fraternity System Participation
  - Special Studies and Reports
  - Surveys

FIGURE 4
Academic Affairs Units and the Types of Data They Might Keep

Academic Departments

- Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Course Information
  - Course Syllabi and Textbook Use
  - Disability Information
  - Documents
  - Facilities, particularly Classroom, Computer, and Laboratory Setup
  - Faculty/Personnel Information
  - Field Placement
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Scholarship/Grants
  - Service Learning
  - Special Studies and Reports
  - Student Information System
  - Surveys
- Academic Advising
  - Academic Records/Grades
  - Academic Support Office Use By Students and Other Groups
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Scholarship/Grants
  - Service Learning
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Academic Counseling
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Housing
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Scholarship/Grants
  - Service Learning
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys

Academic Dean's Offices

- Academic Records/Grades
- Academic Support Office Use and Data
- Admissions
- Assessment Data
- Athletics
- Course Information
- Course Syllabi and Textbook Use
- Disability Information
- Documents
- Facilities, Classroom, Computer, and Laboratory Setup
- Faculty/Personnel Information
- Field Placement
- Institutional Research

FIGURE 4 (cont.)

Internships/Cooperative Education
Learning Center Use
Placement Data
Prerequisite Information
Registration
Scholarship/Grants
Service Learning
Special Studies and Reports
Student Information System
Surveys

Academic Affairs

Academic Records/Grades
Academic Support Office Use and Data
Admissions
Assessment Data
Athletics
Course Information
Course Syllabi and Textbook Use
Disability Information
Documents
Facilities, Classroom, Computer, and Laboratory Setup
Faculty/Personnel Information
Field Placement
Institutional Research
Internships/Cooperative Education
Learning Center Use
Placement Data
Prerequisite Information
Registration
Scholarship/Grants
Service Learning
Special Studies and Reports
Student Information System
Surveys

Institutional Research

Academic Records/Grades
Academic Support Office Use and Data
Admissions
Assessment Data
Athletics
Course Information
Disability Information
Documents
Facilities, Classroom, Computer, and Laboratory Setup
Faculty/Personnel Information
Field Placement
Institutional Research
Internships/Cooperative Education
Learning Center Use
Placement Data
Prerequisite Information
Registration
Scholarship/Grants
Service Learning
Special Studies and Reports
Student Information System
Student Life Data
Surveys

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A Data Audit and Analysis Toolkit to Support Assessment of the First College Year

Technical Manual

Karen Paulson

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and
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FOREWORD

The Data Audit and Analysis Toolkit is intended to help those responsible for planning and implementing programs focused on the first college year to better understand the student experience during this critical period. The idea for the Toolkit grew out of our strong conviction that colleges and universities in the country typically "don't know what they know" about the first year of college. Most institutions have a lot of data about first-year students. But these data are frequently collected by different offices for different purposes and are not usually harnessed by faculty and staff to paint a comprehensive picture of what is happening to first-year students. The Toolkit provides a way to begin exploiting these hidden information resources to enhance both experiences and outcomes for students in their first college year.

While the notion of a "toolkit" may at first seem mundane, we view this effort in the light of a larger vision provided by Russell Edgerton, Director of the Pew Forum on Undergraduate Learning. When Russ was leading the education grant-making program at The Pew Charitable Trusts, he inspired and funded a remarkable array of improvement initiatives for undergraduate education. Some of these, like John Gardner's work in the Policy Center on the First Year of College, were intended to directly improve institutional practices. Working in Russ' words "from the inside out," they were designed to change the way colleges and universities do business by applying the best of what we know about what helps students learn and succeed. Others, like Peter Ewell's work at the National Center for Higher Education Management Systems (NCHEMS) on accreditation and public accountability, were intended to shape the broader conditions within which higher education institutions do their work. Operating "from the outside in," they were designed to change public conversations about "quality" in higher education, and to create and align external incentives for institutions to act deliberately to improve undergraduate education. Running through both was the common theme of taking active, collective responsibility for student learning and success. The Toolkit is but one of many initiatives advanced in this spirit by the Policy Center on the First Year of College—which is itself one of some forty individual projects that are now members of the Pew Forum on

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Undergraduate Learning. Though the language of the Toolkit is of data elements and analysis, a common vision of success and improvement inspired its creation and should remain foremost in our minds.

The specific idea for the Toolkit came up in a speech Peter delivered at John's invitation to the National Forum on Assessment of the First College Year, held at the University of South Carolina in February 2000. Peter's central theme in this talk was that college officials usually have only limited understanding of the "lived experience" of first-year college students—the often highly personal events and milestones that may make the difference between leaving an institution and sticking it out. With better understanding, educators could establish better policies, build better programs, and make better decisions. A second key point Peter made was how different and complex these "lived experiences" turn out to be. Behind the "averages" of most statistics are myriad real individuals—who come to college with different expectations and abilities, and who interact with the institution in distinctive ways. The same program may thus have very different effects on different kinds of students, and we establish "generic" programs at our peril.

Understanding the diverse experiences of students in their first college year demands better information than most institutions can currently lay their hands on. A good first step is to identify, inventory, and round up the data that your institution already has about first-year students. Capitalizing on NCHEMS' experience in conducting "data audits" of this kind, we enlisted the help of ten pilot institutions to help us try out the concepts embodied in the Toolkit. Karen Paulson of NCHEMS took the lead in drafting the document and incorporating the lessons learned from the pilot institutions. Mike Siegel of the Policy Center did yeoman service in recruiting pilot schools and in coordinating the review and implementation process. Based on the experiences of these pilot participants, institutions can benefit significantly from taking stock of their existing information resources on the first year of college. Any strategy for improvement, though, should utilize multiple measures in addition to the student-record information that the data audit will reveal. Prominent candidates for such additional measures are two data-collection approaches also underwritten by Pew—the National Survey of Student Engagement (NSSE) and the joint Policy Center and UCLA Higher Education Research Institute's survey, Your First College Year. But whatever the approach taken, institutions should be as proactive and creative as they can be in seeking multiple sources of information about how students experience and negotiate their critical initial encounter with college.

The information that results from this exercise has many uses. Most important, of course, better understanding can lead to program improvement. Specific knowledge of what works, for whom, and under what circumstances can help those responsible for first-year programs to design better interventions and experiences, tailored particularly to the needs and characteristics of different kinds of students. The same kind of information can help educators evaluate the effectiveness of these interventions and, if they are proven effective, can help them argue for continued funding in those tight budget years that seem to be all too common these days. Building the databases needed to understand the first year of college also positions institutions to gradually extend the coverage of their information resources to address the entire undergraduate experience. Concentrating initially on information to improve first-year success can thus address a prominent problem faced by many colleges and universities while it simultaneously provides the foundation for a more comprehensive campus assessment effort.

But most important of all as you begin to use this Toolkit is to remember the original vision: increasing the success and academic performance of the diverse array of students who attend our many institutions. They and the public depend on us to provide the effective academic programs and support services that can help them fulfill their rich and unique potentials.

Peter Ewell and John Gardner

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The National Center for Higher Education Management Systems wishes to thank the Policy Center on the First Year of College, located at Brevard College (NC), for their collaboration on the First Year Data Audit and Analysis Toolkit Project. We would also like to acknowledge The Pew Charitable Trusts and the Atlantic Philanthropies for their generous support of the project.

Ten institutions participated in the pilot study of the Toolkit. Individuals from Augustana College (IL), The University of Minnesota-Duluth, Ohio University, Northeastern State Technical and Community College (TN), The University of Texas-El Paso, University of Cincinnati, Lynchburg College (VA), Blue Ridge Community College (VA), Santa Fe Community College (FL), and Washington State University gave countless hours to implementing data audits on each of their campuses. They read and gave useful comments on draft versions of the Toolkit and kept track of the opportunities and pitfalls they encountered while conducting their data audits. As a result of their input and comments, this Toolkit is a much stronger and more understandable document.

The Policy Center on the First Year of College partners, John Gardner, Betsy Barefoot, Randy Swing, Marc Cutright, and Mike Siegel, helped shape the Toolkit through their comments on draft versions, discussions of potential areas for strengthening or trimming, and their support for the project all along. Special recognition must be given to Dr. Michael Siegel at the Policy Center on the First Year of College. During the Toolkit's development, he collaborated at every stage: editing early drafts, presenting conference sessions about the Toolkit, answering questions about data audits, and supporting it through to completion. Thanks, Mike, you're the best!

NCHEMS colleagues Peter Ewell, John Clark, Linda Keep, Patrick Kelly, Clara Roberts, and Paula Schild read drafts of the Toolkit and gave invaluable editorial suggestions.

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INTRODUCTION

Why a Data Audit?

The basic objective of a data audit is to identify and inventory data sources and needs across the campus. Information derived from the audit can then be used to design and create a flexible analytical database suited to conducting a range of analyses about the first year of college on an on-demand basis. Put simply: A data audit allows an institution to periodically and systematically take stock of, and then mobilize, its data resources. All colleges and universities should consider conducting a data audit with regard to the first year of college in order to accurately assess the implementation and impact of the first year on students, faculty, and staff. If an institution chooses, data audits can be expanded to include the entire institution and data about students at all levels.

A data audit allows an institution to periodically and systematically take stock of, and then mobilize, its data resources.

A fundamental shift of perspective is required to assess the implementation and impact of the first year. Determining "what happened" and "what mattered" during that year involves moving from a cross-sectional to a longitudinal perspective. Data contained in live transactional databases such as admissions or registration systems, by their very nature, change every day. Therefore, using such data directly to examine students and their behavior analytically has many drawbacks. Instead we need to capture "snapshots"—that is, freeze the data, containing carefully defined subsets of these data at periodic intervals and archive them for later analysis. These subsets of data can be used in combination to provide a model of student movement through the curriculum and institution. Determining which particular data elements to capture in this manner—and where they can be found—is a primary objective of the data audit. Often data are found organized in databases by type of data or survey or survey administration. What we really want for analysis, though, are data organized by *student*—analogous to a transcript that assembles data about what happens to them *over time*. Data of this kind enable us to investigate the first-year student experience to examine such items as patterns of retention and interrupted enrollment, the order in which courses are taken and completed (or dropped), and any association between academic success and participating in particular kinds of programs or interventions.

Conducting a data audit and creating a database, however, are not ends in themselves but activities in an ongoing process, designed to enable campuses to more effectively understand and improve the experiences of their students in the first year of college. Examining patterns of student behavior and the effectiveness of first-year programs, therefore, is as much a matter of attitude as it is of technique. A key point here is simply the commitment to improve. Institutional commitment, supplemented with the flexibility and latitude to make changes in first-year programs and activities, will make a difference to students. Individuals involved in first-year-of-college programs should be continually encouraged to ask empirical questions about performance and effectiveness, and to back up their opinions and anecdotes with facts. It is appropriate to ask: "Is this an empirical question that can actually be answered and supported with some data?"

This Toolkit is based on the premise that it is important to conduct a data audit and data analyses on the entire first year of college. This requires bringing together data already gathered and used, as well as data that are collected and unused, to get a holistic understanding of the first year of college, rather than focusing on separate activities, experiences, and classes. The Pew Charitable Trusts and The Atlantic Philanthropies generously supported the Policy Center on the First Year of College and the National Center for Higher Education Management Systems as they developed the documents and conducted the pilot study for the Toolkit. A call for participation in the pilot study yielded nineteen applications. From these, staff chose ten institutions to represent a range of institutions: Augustana College (IL), The University of Minnesota-Duluth, Ohio University, Northeastern State Technical and Community College (TN), The University of Texas-El Paso, University of Cincinnati, Lynchburg College (VA), Blue Ridge Community College (VA), Santa Fe Community College (FL), and Washington State University. Input from this diverse set of institutions has strengthened the Toolkit and made it more applicable in a variety of settings.

The Technical Manual of the First Year Data Audit Toolkit is designed for use by both technical personnel who will be conducting the data audit and associated analyses and the administrators who want more in-depth information about data audits. The Technical Manual begins with the same chapters and sections found in the companion document, The Administrative Rationale of the First Year Data Audit Toolkit. First, a general overview explains the importance of a data audit focused on the first year of college. The next section briefly outlines how to foster a culture of evidence on campus and some tips for creating a "data-based dialogue" with various campus constituencies, followed by an outline of what is involved in conducting a data audit. The Technical Manual then continues with a set of recommendations for a "common core" of data elements that institutions should consider assembling and maintaining in order to conduct analyses of the first year of college. This section is followed by a short discussion about the construction of longitudinal student databases. Finally, the Technical Manual concludes with the kinds of data analyses that might be used to illustrate what is happening in the first year of college. A range of standard reporting templates are provided as an associated appendix. The companion, Administrative Rationale, contains only the beginning sections and is targeted for academic affairs or administrative affairs administrators in order to build an argument for conducting a data audit on campus.

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CREATING A CULTURE OF DATA USE

Conducting a data audit and creating a database for analysis are not ends in themselves but activities in an ongoing process designed to enable campuses to more effectively understand and improve the experiences of their students in the first year of college. Examining patterns of student behavior and the effectiveness of first-year programs, therefore, is as much a matter of *attitude* as it is of technique. A key point here is simply the desire to improve—and the flexibility and latitude to make the kinds of changes in programs and activities that will make a difference. Campus leaders need to:

- Foster this attitude continually,
- Allow people "in the trenches" the discretion to change what they do,
- Encourage active and ongoing participation of the faculty, staff, and students from across the institution,
- Encourage as much use of public records and open access as is possible, given confidentiality guidelines,
- Support institutional faculty, staff, and administrators with data and appropriate resources, and
- Visibly celebrate their efforts and successes.

Conducting a data audit and creating a database for analysis are not ends in themselves but activities in an ongoing process designed to enable campuses to more effectively understand and improve the experiences of their students in the first year of college.

A second key point is to remember that the "right" things to do during the first year of college are not just matters of opinion and debate, but can be investigated concretely with real data. As a result, all people involved in first-year-of-college programs should be continually encouraged to ask empirical questions about performance and effectiveness, and to back up their opinions and anecdotes with facts. In other words, whenever somebody is tempted to assert, "X is happening" or that "Y is the case," (s)he should always pause to consider, "Is this an empirical question that can actually be answered and supported with some data?"

When seeking to build a culture of data use on campus, it is also important to bear in mind the many different ways in which people use information.

Most researchers or institutional analysts tend to adopt the rational perspective on data use, which assumes that those individuals running programs want information to make decisions. And, indeed, that is often the case. Real decisions must be made in first-year programs about such matters as whether to continue with particular program components, how much to invest in various activities, and how to establish priorities for serving specific types of students. It is equally important, though, to be aware that information serves a variety of *other* functions in any organizational setting. Among the most prominent of these are:

Sometimes data are useful simply to signal the fact that a problem exists that needs to be further investigated.

- Problem Identification. Sometimes data are useful simply to signal the fact that a problem exists that needs to be further investigated. In this regard, establishing statistical indicators may well be a profitable course of action. Monitoring indicators over time (e.g., annually, from term to term, etc.) can reveal the extent to which progress is being made in improving performance, or it can chart important changes in student behaviors or conditions. Graphic or visual displays of such information are often useful for problem identification because they can quickly be scanned for anomalies. For the first year of college, for example, useful statistical indicators might include:
  - ✓ First-to-second-term persistence (reenrollment) rate,
  - ✓ Fall-to-fall reenrollment rate,
  - ✓ Percent of first-year students in academic difficulty,
  - ✓ Percent of first-year students requiring and completing developmental work in basic skills areas (reading, writing, math),
  - ✓ Number of violations of established policies for placing students into courses or prerequisite course sequences,
  - ✓ Student/faculty and student/advisor ratios, or
  - ✓ Percentage of courses dropped.

Another prominent use of the kinds of information generated through a first-year data audit is simply to paint a broad picture of what is happening in a particular setting or for a targeted population.

- Context Setting. Another prominent use of the kinds of information generated through a first-year data audit is simply to paint a broad picture of what is happening in a particular setting or for a targeted population. In contrast to problem identification, in which very specific pieces of data are used as indicators that point to an underlying condition or phenomenon, the objective here is to flesh out a situation as completely as possible using as much information as possible. An example for the first year might include an in-depth look at the experiences of male students of color, drawing on data about basic patterns of persistence and coursetaking, questionnaire data on attitudes and perceptions, and data about participation in and reactions to first-year programming. Presentation of such results usually emphasizes how the various individual pieces of data fit together to yield a comprehensive and integrated "story" of what is happening. Consistent with this emphasis, qualitative data drawn from observations and interviews are often used in conjunction with statistics—both in order to expand the portrait of experience being created and to render the presentation more "real."

- Informing Discussion. Because academic settings are highly participatory, decisions are often long in coming and discussions of opinions and options are frequently long and arduous. Concrete data are useful in such settings to focus discussion and to close off obviously unproductive lines of thinking. At the outset, for example, a concrete piece of data about a student experience or about the effectiveness of a particular program element can generate a far more focused and useful discussion of what might be done rather than a vague feeling that "something is wrong." At least as important, using data judiciously can also help guide a wandering discussion and can discipline it so that uninformed opinions are less dominant. Committees are a fact of life in the academy, and many first-year activities are governed or advised by them. Using data to frame and steer committee discussions in productive ways (away from mere anecdotal stories) can thus be especially important.
- Selling Decisions. Decisionmaking is always complex, and decisionmakers rarely make a decision *only* on the basis of formally supplied information. Additional factors will always include political climate, perceptions of potential impact, and a good deal of plain "gut feeling." Nevertheless, given this complexity, data are often useful in explaining a decided-upon course of action after the fact. This strategy helps mobilize support for the decision, and allows the decision to be easily explained to those not involved in making it but whose "buy-in" is nevertheless important. At the same time, information can be especially important in making a case to funders that a particular program or line of work is critical. While seemingly cynical, this use of information is nevertheless important in the real world of academic decisionmaking and those responsible for first-year-of-college programs ignore it at their peril.

Data are often useful in explaining a decided-upon course of action after the fact.

Strategies

There are also a number of proven tactics for using information in productive ways on campus and for getting people involved in looking at data. Among the most useful are the following:

- Expectation Exercises. One of the most frequently encountered reactions when sharing a piece of information with a campus audience is, "I already knew that." This response may occur because individuals want to feel that they grasp situations fully, even though they may not have thought much about them in advance. Partly it is because the human mind is good at thinking up explanations for things after the fact—and thus not being "surprised" by them. But this reaction often gets in the way of acting on information in real-world situations. One way to counter it is, before the results are revealed, to ask those involved what they *think* the result of any analysis or data-gathering exercise is going to be. (For example, if you ask faculty at many regional state institutions what the mix of degrees granted in a year might be their answers are often heavily weighted toward the liberal arts.) This exercise makes participants think concretely about consequences and possible actions from the outset. More importantly, it provides a baseline against which the actual results can be compared, once they are distributed. (Continuing the example, the reality of the degree mix for regional state institutions is usually heavily weighted toward business and education degrees—professional, rather than liberal arts degrees.) Differences between the forecast and the truth often provide a springboard for discussions about action implications because people are surprised and more likely to then be drawn into the discussion. See **Figure 1** for an example.

Most people are not interested in data for its own sake.

- Discrepancy Studies. Along the same lines, data are often most powerful in generating interest or in starting discussions when they are packaged around a discrepancy. Discrepancies can be of many kinds, for instance, between:
  - ✓ Expectations and actuality (as above),
  - ✓ Established targets and actual performance,
  - ✓ Aspirations and reality,
  - ✓ Standing policies and real behavior, or
  - ✓ One population group and another.

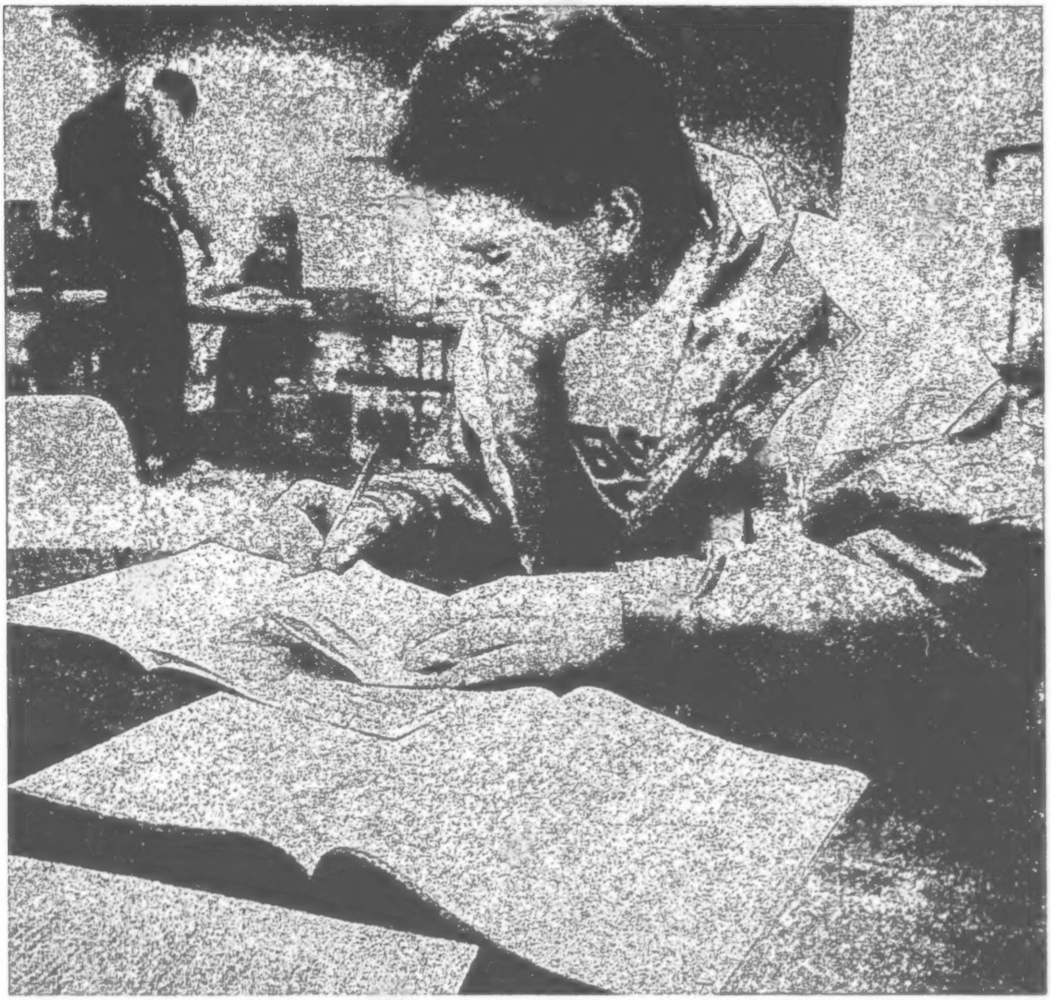
  But by their very nature discrepancies tend to command more attention than just presenting a number. A particularly powerful way to start discussions about advising, for instance, is to present data on student course-taking behavior that suggest established prerequisite policies are being violated and that students are failing subsequent courses as a result.
- Beginning with a Recognized Problem. Most people are not interested in data for its own sake. As a result, it is often a challenge to build support for a campus-wide project whose sole objective appears to be to improve data resources. Instead, it is usually better to begin such efforts with a presenting problem that is apparent to everybody—for example, widespread academic failure among first-generation students, visible shortfalls in quantitative reasoning skills among entering students, or uneven teaching quality in multi-section courses. Obviously, such presenting problems will be different on each campus and cannot be predicted. Indeed, the "demand" side of the data audit process is often useful precisely because it unearths such examples. Once identified, much of the effort can then be packaged around the

need to address such concrete, widely recognized problems rather than based on just a vague need for better data.

- Creating Public Opportunities for Discussing Data. For similar reasons, many campuses have found it valuable to create highly participatory occasions to discuss the implications of data findings. Such discussions can involve broad cross-sections of the campus community or be limited to those directly involved in running programs and are often conducted during non-peak scheduling periods in retreat settings. One public university, for example, holds a summer planning retreat each year with broad participation from faculty and program staff. At the retreat, a few key data findings are presented and participants break up into small working groups to brainstorm ideas about what might be done in response. Results of these sessions are then shared and discussed, and become action priorities for the coming year. Many variations on this theme are possible, but all involve presenting selected statistics, then gathering a group of people (including students) to discuss their implications.
- Avoiding Data Overload. Many analysts err in the direction of trying to report too much when they present findings—either in report form or in public occasions such as those noted above. Analyses should be comprehensive and thorough but it is usually better to release a few carefully chosen findings, organized around issues or problems that are important, rather than present a "data dump." Answering the inevitable questions that a limited set of findings will generate and thus initiating a "data dialogue" is the best way to get people hooked on information.

It is usually better to release a few carefully chosen findings, organized around issues or problems that are important, rather than present a "data dump."

A final point about building cultures of evidence is that *action* and *follow-through* are the most important conditions of all. Few people are interested in investing in information if it is clear that nobody will act on it and that nothing will change. Conversely, one of the best ways to promote involvement is to actively demonstrate that change is intended and possible. As a result, it is frequently useful to undertake reasonably small projects at first, where follow-through can be demonstrated immediately to potentially doubting constituencies.



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THE FIRST YEAR OF COLLEGE

Why Are First Year Data Important?

The first year of college is a confusing time for students, faculty, and college personnel. Whether at a community college or at a four-year institution, multiple programs are often in place, offered to different types of students, creating multiple experiences with many different types of interactions. Cause and effect is always an issue. Determining which programs and which interactions have beneficial effects for which groups of students is often difficult to figure out. We need a lot of data, often from disparate systems or offices, collected systematically, and organized appropriately in order to conduct such analyses.

The first year is also a logical place to anchor the development of a wider institutional assessment effort. Data collected on the first year of college can be the foundation for expanded data use and analyses on the entire institutional experience as warranted. Though complex, the first year usually consists of a well-delineated set of experiences for an easily identified set of students. It is, therefore, a manageable place to start when building an evaluation capacity at any institution. Furthermore, it makes chronological sense to begin a larger longitudinal study of student experience with the first year. Once baseline data about the characteristics and experiences of an entering cohort of students are assembled, it is possible to continue to capture information about these students throughout their academic careers.

Data collected on the first year of college can be the foundation for expanded data use and analyses on the entire institutional experience.

Finally, information about the effectiveness of first-year-of-college programs gives program directors an important resource to make the case for which programs to continue and target for possible expansion and which to discontinue. First-year-of-college programs often comprise politically fragile and specially-funded activities, so evaluating effectiveness is critical to proving their ultimate worth. Data must be presented in ways that facilitate discussions about future investments. From a wider perspective, such discussions may simultaneously help to develop a "culture of data use" on campus for the long term that will aid not only first-year but other activities as well.

Institutional Questions About the First Year of College

How should we analytically untangle the many elements of the first year of college and dissect what makes it work? Underlying this master question are four more focused questions having to do with:

A. What is planned for the first year of college?
B. Who is involved in the first year of college?
C. What happened (and where) during the first year of college?
D. What mattered (and why) during the first year of college?

A primary objective of first-year-of-college programs is to ensure continued student success.

A. What Is Planned for the First Year of College?

An initial question to be asked has to do with identifying the objectives of the first year of college at your institution. Even more basically, one might ask whether the first year of college is conceived as an integrated and intentional set of experiences that students are actively advised through and participate in. In initially establishing first-year-of-college programs, most institutions will have already answered this question in the affirmative. Given the existence of a "program," though, are its objectives clearly defined? Like learning outcome statements for a curriculum, it is important to define the objectives of first-year activities specifically in terms of:

- How *individual* students will be *different*,
- *When* that difference is expected (initially or after participation is complete), and
- What students will be *required to do* in the first year of college.

Instead of being defined for individual students in this manner, program objectives are often framed more generically in terms of what the institution will do or what the institution wants to happen for the student body as a whole, or perhaps what an institution wants to happen for an identified group of students. Defining objectives for a student body as a whole rather than for individual students should be avoided because it is far less useful in providing guidance for assessment and evaluation. Who should be involved in designing learning objectives for the first college year? Stakeholders to be involved would probably include student affairs professionals, departments and faculty teaching first-year courses, and residence hall staff where appropriate. Once objectives for the first year of college are defined, then it is necessary to clarify their meaning and implications with the groups responsible for the various activities.

A primary objective of first-year-of-college programs is to ensure continued student success. It is important to emphasize that proof of this objective is always found after the fact. It is manifested in what happens *next* for the student at the institution and within the curriculum, for example, persistence and ultimate graduation, actual levels of student performance in subsequent academic coursework, and the achievement of particular learning outcomes.

Potential outcomes for students in their first year of college include, but are not limited to:

- Developing foundational academic skills such as quantitative, writing, speaking, technology or information literacy skills.
- Learning how to "negotiate" college and the collegiate culture.
- Managing academic life and good practices such as what constitutes scholarly work and the difference between primary and secondary sources.
- Developing appropriate non-cognitive abilities and attitudes like motivation, self-worth, and respect for others.
- Learning how to balance academic work with social life, and often, family responsibilities.
- Developing approaches to critical thinking and problem solving appropriate to a variety of academic disciplines.

The first year of college is often a testing ground for innovative practices that might be extended throughout the college experience if they prove effective.

Each of these possible outcomes suggests a particular evaluative line of inquiry and a specific set of data sources that might be tapped. In addition, the first year of college is often a testing ground for innovative practices that might be extended throughout the college experience if they prove effective. Examples of such practices include peer mentorship and collaboration, problem-based learning, and hands-on engagement with subject matter. Given their potential wider significance, it is always wise to evaluate the impact and effectiveness of such innovations in some detail.

B. Who Is Involved in the First Year of College?

It is important to identify the specific characteristics of the students and faculty who participate in the first year of college. While we may think we know our students well, we often harbor unexamined assumptions about their backgrounds, attitudes and capabilities. For example, we will probably want to know a good deal about the following:

- Student demographic characteristics like gender, race and ethnicity, age, disability status, family background, and whether students' parents attended college.
- Previous educational experiences and achievements of first-year students.

- Student educational and career aspirations, attitudes toward attending college, and areas about which first-year students are apprehensive or expect to encounter difficulties.
- Characteristics of the faculty and staff who work with first-year students including demographics, professional background and experience, and what they expect of students.

These factors can often interact with one another in complex ways to create specific populations of students and staff. For example, knowing that at an institution the "average age of an incoming student is 25" often masks the fact that there may be two distinct populations—one of 18-year-olds and the other composed of more mature students—who are likely to behave very differently. While such issues might simply be a problem of data presentation, they can also be an "institutional myth" that could be addressed by further data disaggregation.

By adopting the student's perspective, most people discover that what actually happens to students in the first year depends a lot on the successful implementation of programs and courses as planned.

The key is to always remember that *real* students, faculty, and staff, who bring a broad cross-section of diverse experiences and perspectives with them to the institution, populate the first year of college. Unless we know a good deal about these experiences and perspectives, it will be hard to figure out what is going on.

C. What Happened During the First Year of College, and Where Did It Happen?

The question of what actually happened to students during their first year of college is rarely asked systematically. Instead, we tend to assume that all first-year programs were implemented as planned and that the experiences of all students were uniform. But this is frequently not the case. Some experiences are planned and explicit while others are spontaneous, amorphous, and random. An operational mantra that should therefore continually be kept in mind is, **"Adopt the student's point of view."** This essential change of lens from our perspective to the student's perspective is critical to determining what really happened to whom. It requires not "looking at" students but instead "looking through" students' eyes to determine the actual behaviors they engage in when they encounter and act out the programs we put in place, as well as what experiences they brought with them to the programs. Sometimes the only way to get the answers to such questions is to "walk the process" by putting yourself in the student's shoes and duplicating and documenting each step directly. For example, one such analysis at a large university revealed that students were often missing the first ten minutes of several of their classes simply because they could not get across campus from their last class fast enough to show up on time.

By adopting the student's perspective, most people discover that what actually happens to students in the first year depends a lot on the successful implementation of programs and courses as planned. However, few activities or programs are actually implemented as planned. Programs often show little impact when evaluated because they were never successfully implemented, not because they were inherently ineffective. For instance, if a part of a first year program centered on a particular instructional strategy (attending a ropes course or use of a new software product) that was not available until halfway through the term, that is an implementation problem. As Joan Stark, professor at the University of Michigan, has pointed out, there are always significant differences between the design, the delivery, and the resulting student experiences associated with any curriculum (Stark and Lowther, 1986). Therefore, it is necessary to look for what interfered with full implementation or what situations arose that altered the original implementation plan.

Three specific syndromes common to the implementation of any program, including those in the first college year, often contribute to this problem and should be anticipated:

- Piecemeal development of programs and program elements that do not fit together very well. Often this approach results in duplication of efforts or gaps in service that are very apparent to students but not always obvious to faculty and administrators.
- Rushing to implement any new design. This situation often introduces a good deal of unintended variation in the way programs are implemented across departments, units, or locations—resulting in uneven (or even contradictory) effects.
- Adoption of a "true believer" stance that assumes automatically that certain things *must* be effective (e.g., small classes, collaboration in all circumstances, etc.). This attitude is often an admirable characteristic of programs about which people care deeply, but unexamined assumptions about effectiveness may mask real difficulties in implementation or design.

Hopefully first-year experiences result in identifiable and beneficial changes in behavior, attitudes, and cognitive abilities that are consistent with program goals.

All three syndromes suggest devoting much more attention to questioning our assumptions about first-year programs from the outset. In contrast to what you *think* might have happened, it is always wise to check these assumptions out with real data.

D. What Mattered During the First Year of College, and Why Did It Matter?

The question of impact, of course, is ultimately what we want to get to in any analysis. Hopefully first-year experiences result in identifiable and beneficial changes in behavior, attitudes, and cognitive abilities that are consistent with program goals. The analytical task associated with answering the question "What mattered?" is to look for longitudinal paths of student learning and development through the curriculum and extracurricular activities that are consistent with the individual student outcomes that you want to achieve. This task requires an essential shift of perspective from a "still photo/snapshot" view of college life to a "moving picture" perspective that emphasizes development and attainment. Doing so enables us to look for different patterns of student movement and flow through the college experience that are created by interactions among the formal curriculum, co-curricular activities, and students' own extra-collegiate experiences. Taking this perspective introduces many behavioral questions that need to be addressed, such as:

- In what order do students take particular classes and co-curricular activities, and how frequently do they participate in particular experiences?
- Do students actually follow the advice given to them in advisement, and what difference did it make?
- What kinds of experiences mattered most for what kinds of students in terms of cognitive or affective development?

It is always wise to build flexibility into databases and analyses with the expectation that the unexpected will happen.

Ultimately, of course, the question of "what mattered" needs to be addressed in terms of intended outcomes and program objectives—which is why it is so important to be precise about these in the first place. The first year of college may also have many unintended or unplanned consequences for students, both for the better and for the worse. As a result, it is always wise to build flexibility into databases and analyses with the expectation that the unexpected will happen.

Given these demands for evidence to document the first college year—and the failure of most institutions to systematically determine who is involved, what is happening, and what mattered in this period—it pays to be systematic about assembling data resources. Techniques for doing so are the central concern of this Toolkit. Going beyond technique, the basic mindset of questioning assumptions and of constantly posing and addressing the four basic questions discussed in this section—what, who, what happened, what mattered—will always be helpful.

THE DATA AUDIT

What Is a Data Audit and Why Do It?

> *Data Audit*: The process of identifying data resources and uses wherever they may be within an institution and gathering them into a useable information system.

The basic objective of a data audit is to identify and inventory data sources and needs across the campus. Information derived from the audit can then be used to design and create a flexible analytical database suited to conducting a range of analyses about the first year of college on an on-demand basis. Such a database is most useful if it is separated from the regular student information system kept by the registrar. By their very nature, the data contained in live transactional databases—like admissions or registration systems—change every day. Therefore, using such data directly to examine students and their behaviors analytically has many drawbacks. In order to move from a view of students based solely on glimpses at the student information system, we need instead to continue to capture "snapshots" of student data that contain carefully defined subsets of data at periodic intervals and archive them for later analyses. These analyses will often require using these "snapshots" in combination to create a "moving picture" that approximates student movement through the curriculum. Determining which particular pieces of data, or data elements, to capture in this manner—and where they can be found—is a primary objective of the data audit. A summary of data audit steps is included at the end of this section.

The basic objective of a data audit is to identify and inventory data sources and needs across the campus.

Put simply, a data audit allows an institution to take stock of and then mobilize its data resources. All colleges and universities should want to take this action with regard to the first year of college for the reasons presented in this document: a) "generic" programs are seldom useful for real (and therefore different) types of students; and b) factors that affect one sector of the student population may not affect another, resulting in differing implications for both policy and intervention strategies. The capability to analytically disaggregate the student population to determine what works for whom is therefore critical.

Elements of a Typical Data Audit

A data audit consists of two primary activities:

- Examining existing data sources at the institution wherever these may be found, and
- Determining those data that are most critical for evaluation, assessment, and decisionmaking needs.

These two activities can be thought of as building campuswide understanding, respectively, of the "supply" of data and the "demand" for data. Conducting a data audit thus involves identifying data sources, creating data inventories, and documenting data collection methods and routines already in place. Examining management and decisionmaking needs, in turn, requires determining schedules and formats for submitting data or information to external constituencies (e.g., accreditors or the state) and determining whether there are management needs for information that are not currently being fulfilled.

While there are many different ways to conduct a data audit, these two overarching purposes—to determine data sources and data needs—should always guide what is done.

While there are many different ways to conduct a data audit, these two overarching purposes—to determine data sources and data needs—should always guide what is done. Once completed, the information gathered during the data audit can be used to help restructure current management information systems. It can also assist you in locating additional points of contact with key constituencies (students and faculty) that might be better used to collect pertinent data. Above all, results of a data audit provide the basic ingredients needed to create the database (or databases) required to conduct ongoing in-depth analyses of the effectiveness of the first college year.

It is usually wise to have different perspectives represented on any team that either conducts or oversees a data audit.

Who Should Be Involved in Planning and Carrying Out the Data Audit?

A data audit can be conducted by individuals or groups, but usually proceeds under the guidance of an institutional or unit-wide committee. Participants typically consist of institutional researchers, academic planners, student affairs professionals, student advisors, faculty and administrators. In addition, it is usually wise to have different perspectives represented on any team that either conducts or oversees a data audit. Involving individuals who are directly familiar with particular data sources because they use them every day—like people from the registrar's office or institutional research—is always beneficial. It is also useful to involve some people who are entirely removed from data processes—for example, some student advisors, faculty or administrators. Such individuals will often benefit the data audit by bringing fresh perspectives to bear on the process, and they will benefit directly from knowing how particular kinds of data are kept at the institution. At the same time, they will acquire greater sensitivity to the fact that the information demands that they often make can be technically challenging or, under current conditions, impossible to meet. Also, those individuals who gather and maintain data will see that their information is important and will be used by others; therefore, they may make more of an effort to keep their data well maintained.

The person or persons chosen to lead the committee should have broad support on-campus, particularly from upper-level administrators, and have a clear understanding of the purpose of the data audit and analyses for the first year of college. Often institutions have co-chairpersons—one with strengths in either academic or student services and the other with strengths in technical areas.

When Should A Data Audit Be Done?

A data audit does not need to be conducted every year.

Data audits are usually done on the occasion of some other major activity. These occasions can include (but are not limited to) accreditation self studies, consideration of new transactional systems (notably student systems, but also personnel systems), when building a data warehouse or data mart, or when new assessment personnel, institutional researchers, or first year coordinators are hired. Although many institutions find it useful to conduct a data audit as a part of or in support of these larger activities, it is not necessary to do so. A data audit can be done just because it seems like a good time to find out what data exist on campus and where they are located. Having said that, a data audit does not need to be conducted every year. It often works out that a three- or five-year cycle is sufficient. Among pilot institutions, universities preferred a 5-year cycle for data audits, and community colleges, because circumstances change more frequently there, preferred a 3-year cycle. Subsequent data audits can use results from the first data audit as a foundation.

Conducting a data audit typically uncovers a range of attitudes on the part of those who collect and keep institutional data.

The Right Attitude

A fresh perspective and an open attitude are important when people conduct a data audit at an institution with which they may be well acquainted. One advantage of having internal personnel carry out the audit is that they will already know many of the vagaries of existing systems. There can be disadvantages to using "insiders," though, including blindness to the existence of unofficial data, unwillingness to listen to other viewpoints, and an inability to probe deeply and consistently to determine whether data are defined differently in different places in the institution. Those involved in data audits should therefore constantly monitor their own assumptions and viewpoints to avoid these pitfalls.

Similarly, conducting a data audit typically uncovers a range of attitudes on the part of those who collect and keep institutional data. Some will be eager to show what they have and will be happy to work with you to determine how a wider range of people on campus could better use the data for which they are responsible. Others will be highly protective of the data for which they are responsible, and may view audit questions as a threat to their functions and independence. An audit team needs to be aware that there are sometimes good reasons for this attitude. For example, free access to some data (e.g., health records or financial aid information) may violate privacy guidelines, and keepers of these kinds of data can get into trouble (and even be prosecuted) if they allow unlimited access. Others may fear that people unfamiliar with how data elements are collected, defined, and constructed will misuse the data. Still others may simply be protecting their autonomy, or covering up poor performance. In all such cases, be sure to listen carefully to their concerns, understand what really lies behind them, and make appropriate compromises.

A Note About Confidentiality

No part of this data audit will require you to engage in any violations of FERPA.

Student data are confidential. The Federal Educational Rights and Privacy Act (FERPA), also known as the Buckley Amendment, protects individually identifiable data from public scrutiny. In the course of a data audit, no individually identifiable data need to be or should be shared with others. The focus of a data audit is on the overall databases and their data elements, not on any specific individual data kept in those databases. If you are unclear of how your institution and state enact FERPA, consult with the institutional researcher on your campus. They will be well versed in what is allowed or not. No part of this data audit will require you to engage in any violations of FERPA.

The Supply Side

Official and Unofficial Databases

It is important to look especially hard for these unofficial data sources when conducting a data audit, in order to make sure that key data elements are not overlooked.

Keep in mind that there are often two basic kinds of databases at any institution: official and unofficial. Usually "official" data—that required for federal or official institutional reporting to the state—is centrally maintained and kept and "unofficial" data is maintained and kept by decentralized units. Many units gather data to address their own internal needs and to meet unique or special reporting requirements. At larger institutions such "guerrilla databases" are often kept in unit-level computer systems rather than in official mainframe database files. Prominent examples include advising data, assessment data, placement data, and responses to student questionnaires—either institution-wide or specific to a unit or program. Or, in the case of qualitative data, student writing samples may be kept in electronic portfolios or as hard copies kept in filing cabinets. It is, therefore, important to look especially hard for these unofficial data sources when conducting a data audit, in order to make sure that key data elements are not overlooked. To uncover such sources, visit departments and units in person to ask about what data are kept and reported to external constituencies.

Types of Data

Data are gathered by multiple units and for multiple purposes throughout an institution. An illustration of possible student services units and offices that might have data relevant to the first year of college is provided in **Figure 2**. **Figure 3** lists the types of data about first-year students and their experiences that are typically kept by the principal student services offices and units listed previously in **Figure 2**. Note that there is some duplication and overlap in this listing because it is typical for different offices at an institution to collect the same kinds of information independently. For instance, the Testing Office, as well as the English department, may keep English placement data; the Counseling office, as well as Admissions, may keep information on parents' education. Where this is the case, it is important to determine if they do so consistently and to then document any differences. Since the first year is influenced by both student services and academic affairs, a similar listing of pertinent academic affairs offices and the types of data they might collect can be found in **Figure 4**.

Note also that these lists are far from exhaustive. Not all of these data may be gathered at your institution, your institution may gather additional data, or the data listed may be collected by offices different from those listed in **Figures 3** and **4**. But with these caveats, **Figures 3** and **4** can be used as protocols for looking for particular kinds of data when conducting a data audit.

Transactional Data

Footprint data

A data audit will also allow you to uncover and capture transaction-based data that are regularly collected by a unit to monitor its own operations. This so-called "footprint" data is gathered from students as they move through and utilize a variety of units on campus. Examples include data on bookstore and food service usage or data on student contacts with and utilization of counseling, advising, or tutorial offices. Cataloging this kind of footprint data makes it available for wider use and analysis and may eliminate the need to collect information about utilization via surveys or other special sources. Transaction-based data also have the advantage of being more complete than survey data because they are usually available for the *entire* student population affected, reducing the kinds of sampling or response-rate problems associated with using special-purpose questionnaires. The main disadvantage of footprint data is that they may not be about the topics that really interest you. Furthermore, they are often kept in intractable or inaccessible formats and places. You will discover the degree to which this is true at your institution while conducting the data audit. Even if such data are not eventually tapped for analysis, it is important to know that they exist and whether they are being kept consistently with one another with official institutional definitions.

A data audit of the first year needs to be limited in scope. It must focus on what occurs during the first year of college. Although some people may be interested in looking more in-depth at the preadmission information such as data on first contacts, etc., that is not necessary unless an institution wants to include enrollment management data in their analyses.

Who Collects Data and Why?

The next point to determine is which units keep which data. Units and offices scattered across the institution often keep similar data. More often than not, they are unrelated to one another, cannot be linked, and may be based on slightly different definitions. Similarly, units may analyze data in different ways to achieve different ends. During the data audit each of these points needs to be documented. If you find that multiple units keep virtually the same data but collect it independently, the institution might want to consider establishing a centralized method for addressing common needs more efficiently. By doing so, consistent definitions can be used across campus and the burdens of duplicative data collection can be minimized.

A data audit of the first year needs to be limited in scope. It must focus on what occurs during the first year of college.

Actually conducting the "supply side" of the data audit involves *physically* visiting each office or location that collects or maintains data, using **Figures 3** and **4** as guides. Directors of offices and units should be apprised of the data audit and why it is being conducted, but often it is associate directors, data analysts, or researchers in an office who know the details about data. Oftentimes, it might seem easier to send out a survey or an email inquiry with these questions, but we advocate face-to-face interviews in individual's offices—"walk throughs"—for the following reasons:

Units and offices scattered across the institution often keep similar data. More often than not, they are unrelated to one another, cannot be linked, and may be based on slightly different definitions.

- It creates a collaborative atmosphere for the sharing of data and data sources.
- It honors office personnel and the importance of their efforts.
- It indicates an interest in office personnel and what they are doing.
- It builds a relationship with these individuals and with the office.
- It allows you to read reactions from individuals and see the office set up.
- It allows you to do immediate follow-up and collect artifacts.
- It also allows for "serendipitous" meetings and discussions about data and databases, including guerilla databases.

When you visit each administrative office, academic department, or unit, it is important to determine:

- What kinds of records, data, and databases it keeps on first year students, programs, experiences, and activities.

- How data collected are used by the unit.
- What schedules govern when data are collected, and if and when data are entered into computer systems. Extracts from live databases are often taken on the tenth day of a term and a given time period (such as one week) after the end of the term.
- What surveys it administers, to whom (all first-year students or a particular subset of first-year students), and on what schedule.
- What additional local data collection efforts it engages in with regard to first year students, courses, programs, experiences, and activities.
- What questions the unit would like to be able to answer about the first year of college. What data would be needed that are not now collected.
- What are unit staff perceptions about gaps in the data and information that they possess on the first year of college.
- The extent to which available first-year data sources and databases are underutilized, and whether unit personnel have ideas about why this might be the case.

While conducting the audit, it is often helpful to collect documentation about the data that each unit controls.

Furthermore, while conducting the audit you need to ascertain across units:

- Whether the records, data, and database structures that these units and offices maintain differ from one another, and exactly how they differ.
- The extent to which definitions for common data elements vary across units and departments.
- The extent to which formats in which common data elements are kept vary across units and departments.

While conducting the audit, it is often helpful to collect documentation about the data that each unit controls. Artifacts or documents to consider collecting from units when you visit them include:

- The actual forms or questionnaires used to gather and record data.
- Data element dictionaries.
- Data element definitions (if not included in the data element dictionary).
- Database structures and file formats used to archive data (for example, are data kept on CD-ROMs, in mainframe files, in Access databases, in old 80-character length fields).
- Notes on specialized software needed, if any, to access and use data.

Notes about the actual coverage, timing, and completeness of the data should be organized by type of data, following the logic of **Figures 3** and **4**. Forms, artifacts, and documents should be numbered and keyed to the text of the data audit report.

How Complete Are the Data?

The completeness of the data gathered by the institution and its individual units is critical. Data on a given topic are sometimes collected for only a *portion* of the entering student body—from those who attend orientation, who came to class on a particular day, or whose admissions files came through the regular admissions process, for example. It is, therefore, important to follow up with units about completeness by asking them the following types of questions:

The completeness of the data gathered by the institution and its individual units is critical.

- Are individual students required to fill out and answer all of the data elements on every form—either paper or online—such as admissions, registration, and housing forms? Or, when applicants fill out admissions forms are they told to fill out only certain information on the sheet?
- Are data elements transferred from paper or online forms into databases? Who does this? Do data entry clerks do it? Are the forms scanned automatically? Does the system load online entries directly as data elements into a database? What is the schedule for accomplishing these entries? If data entry is done by hand or if forms are scanned, are critical data elements entered immediately and other, less critical data elements entered later in the term when there is less pressure? What happens to forms after data are entered? Do any checkpoints in the system exist to ensure that all data entry is completed?
- Are there fields that are never entered into the database at all, even though the information is supplied or forms filled out?
- Are individuals asked for detailed information on a form, but then upon data entry is the relevant data element collapsed into a "Yes/No" or other summary format?
- Are data elements entered directly into the live student information database or are they entered into an intermediate database (e.g., Access or Excel) and then loaded? What office does this?

Some institutions also find it helpful to run frequency checks—a summary of what numbers actually populate the fields and how often they each occur—of individual data elements that are not often used in order to determine directly the extent to which all students have entries and how error free these entries are. Using a simple example, a frequency check on the field listing "gender (or sex)" might contain Ms and Fs in addition to 1s and 2s. A frequency check would also give an indication of how many persons in the file had no record of their gender. Sometimes, for example, computing center personnel will say that they "maintain" a given data element but later probing will reveal the fact that nobody loads data into the field any more, or that the database fields contain unusable data.

Where Do the Data Go?

Once it has been determined which data elements each particular unit gathers, the next step is to determine where data elements go after they are collected. For each data element (or group of data elements), ask personnel in pertinent units:

- Which databases do these data elements go into? Are certain data elements put into multiple databases?
- How are these entries in other databases updated? On what schedule and who is responsible? Are old values over-written in this process?
- Are fields used for multiple purposes? Are different offices using supposedly "unused" fields for different purposes and including their own data elements and codes?
- What definitions are used for various data elements used in multiple databases?
- Who has authority over these databases?

It is frequently useful to physically "walk the process" of collecting data.

Results of this portion of the data audit are often best documented in terms of a map or flow chart showing clearly how and when particular data elements move from point of collection to the various places where they are archived or used.

"Walking the Process"

In order to accomplish these various steps, it is frequently useful to physically "walk the process" of collecting data. One way to do this is to adopt the student's (or faculty member's) perspective and go through each step that has to be accomplished in order to complete a particular action—to register for a class, or to obtain financial aid, for instance. Determine the specific forms that students have to complete for which units across the campus in order to attain their objective. Follow up on each data element (or group of data elements) using the questions listed above.

A pilot institution cleverly combined this aspect of the data audit with their ongoing institutional commitment to service. Staff members selected actual students to go to specific offices to "walk the process" to collect data and information for the data audit as well as to gather information about how well they were treated and experience the customer service skills of the personnel in the various offices visited.

Another way to "walk the process" is from a data element's point of view. This will allow you to determine which units gather particular data elements (and identify any redundancies), which database(s) particular data elements are kept in, what definitions and categories are used in which databases, who is responsible for each data element, and who is using that data element to what end.

Supply Side Summary: What Is Important to Gather During this Process?

When gathering information about data on campus, it is important to collect as much documentation as possible about data and databases that exist. The following types of support documentation will be especially useful:

- Copies of forms, both paper and online.
- Data element dictionaries for databases.
- Data element definitions (if not included in the data element dictionary).
- Documentation on the structure of databases and the format(s) in which individual data elements are kept.
- Information on historical database files and how many years of data are available.
- Security guidelines and change procedures for all of the databases encountered. That is, who has access to the data and who has authority for updating or changing the database or its data elements?

The other aspect of doing a data audit is to determine what data needs exist on your campus.

The Demand Side

The other aspect of doing a data audit is to determine what data needs exist on your campus. This aspect is best conceived of as the "demand" side of the analysis, complementing the "supply" side represented by the inventory of existing data sources. In addition to talking with individuals about the data they collect, you will need to talk with institutional decision-makers and other data users. Often there is considerable overlap among individuals and offices that are data users and data collectors, but do not assume that there is.

Offices, units, and individuals on campus that need to be contacted about data needs include academic affairs personnel—the provost, deans, and department heads—student affairs personnel, as well as individuals involved in accreditation studies or who must report information to state or federal officials (directors of TRIO programs or teacher education programs, for example). Examples of external reporting that may be required would be to accreditors, to state agencies, or to governing boards. When you visit these offices and units, ask them:

- Who are the office's key internal and external constituencies?

- What kinds of decisions does the office regularly make, and what kinds of information are needed (or desired) to make them?
- To whom must the office report data and information?
- What existing reports and data reporting requirements does the office have and whether it is able to fulfill them? Working backward from existing reports and procedures, determine what data are needed and how calculations are made.
- What kinds of reporting and decision cycles are typical? (For example, grant budget cycles can run on academic years, July-June fiscal years, or even October-September fiscal years, which will affect when data are needed.)
- How current and accurate do data and information need to be?
- What is missing that office personnel deem essential to have (that is, data they need versus data they want)? Are data missing because they do not exist, or is existing information not accessible to office personnel?
- What questions should office personnel be able to answer about the first year of college?
- What are their perceptions of gaps in data and information?

The intent is to inventory information resources and needs to help decisionmarkers at the institution decide how to proceed.

Make sure to point out that even though you are asking them these questions, it does not mean the data audit will result in complete resolution of issues that are raised or that all their data desires will be met. Instead you should explain carefully that the intent is to inventory information resources and needs to help decisionmakers at the institution decide how to proceed.

Demand Side Summary: What Is Important to Gather During this Process?

Just as on the "supply side" of the data audit, it is useful to gather as much documentation as possible when you visit each site. Documents that you should gather from these offices and units include:

- Copies of recent reports that the unit has submitted using official (and unofficial) institutional and office-level data.
- Copies of data-reporting requirements, including schedules and format specifications.

Samples of the formats or methods the unit uses to analyze data (e.g., calculational routines used to compute class loads, advising schedules).

Bottom Line: Summary of Procedures for Carrying Out a Data Audit

Procedures for carrying out a data audit are summarized below. Please note, however, that while all these steps should be accomplished, it is important to be flexible in carrying out this task. Different institutions may require somewhat different approaches because of their organizational structures and politics. At the same time, some office or individual in the past (usually the Office of Institutional Research or its equivalent) may have previously accomplished much of the work included in a data audit. Where this is the case, it is useful to refer to this previously accomplished work as a starting point. Keep in mind that circumstances may have changed, there may be new office personnel, or something may have been overlooked in the process.

Different institutions may require somewhat different approaches because of their organizational structures and politics.

1. Identify offices and units across campus that gather or keep data pertinent to the first year of college, as well as those offices and units that use or report data. Emphasize that the data audit is a collaborative institutional process.
2. Contact appropriate individuals who can fairly represent the resources and perspectives of these offices and units.
3. Set up mutually agreeable times to visit these individuals *in their offices* in order to discuss data sources and data uses.
4. Approximately one week prior to visiting, send these individuals a list of the questions to be discussed and the artifacts or documents you will want to collect from them. If a particular office is only a data-source office or only a data-use unit, adjust the list of questions accordingly.
5. Conduct the site visit. Ask your questions. Clarify, clarify, clarify. Take detailed notes. Collect artifacts and documents. Where appropriate, "walk the process" by simulating the steps a student (or faculty/staff member) would take, or follow the path of a particular data element from point of collection through data entry, archiving, and use.
6. Before leaving, thank the people involved for their time and help. Invite them to contact you if they think of anything further that might be of use. Secure an agreement that should there be any follow-up questions, they would be willing to respond to them. Confirm their telephone numbers or email addresses.
7. Send thank-you notes to people you visited and interviewed; it might be appropriate to copy their managers or bosses as well.

In order to facilitate a culture of data use and information sharing on campus, consider making the findings of the first-year data audit available to the campus in the form of a brief report.

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OUTPUTS OF A DATA AUDIT

After the "raw data" generated by the data audit have been assembled (interview notes or tapes or transcripts as well as artifacts documenting existing data and reports) from offices representing both data sources and data users, results should be synthesized to yield a coherent picture of data resources and the culture of data use at your campus. Many different ways of summarizing results are possible, depending upon institutional needs. In some cases, you may want to prepare a single comprehensive report on findings. In other cases, it may be more useful to organize findings around common topics—for example, lists of first year data resources and who has them, recommendations for a "common core" of data (see **Appendix A**), and a report on the current culture of data use on campus. As noted earlier, it is also usually appropriate to prepare a brief summary of the project and its results for wider distribution to the campus community.

Some institutions found that they did not have program goals for their first-year programs.

Outcomes of the pilot study fit into four categories. Institutions found that they learned lessons about a) their first-year programs, b) broad data issues, c) how to improve data audit implementation, as well as d) refinements that could better their institutional infrastructures. Examples of lessons learned for first-year programs included:

- Some institutions found that they did not have program goals for their first-year programs.
- Some were under the impression that there was more tracking of first-year students happening on campus than was actually occurring.
- They found that the data audit raised awareness about the entering-student program.
- Student engagement with services, particularly student support, was not captured on some campuses.
- A few campuses discovered that student course evaluations were not linked or kept in a database.

Examples of lessons learned about data and data use on-campus included:

Initially, at one institution, staff wanted to eliminate data but by the end of the audit many wanted to gather more data.

- Some institutions found that they do not enter all data "resulting in loss of potentially valuable data."
- The issue was raised of who will decide which data are entered when budgets are tight and personnel are already overly busy. In fact, data may not be entered; but as processes are increasingly automated, institutions should keep in mind entering more data as it can be done.
- Initially, at one institution, staff wanted to eliminate data but by the end of the audit many wanted to gather more data.
- First generation college attendee information was often collected for only a particular population of students. The same was true for email addresses.
- At one institution, pilot project administrators discovered the value of data collection was challenged in student services areas because of the difficulty in seeing the connection between data collection and improved services.

Data are often not coordinated, shared, or organized well.

- Data are often not coordinated, shared, or organized well.
- One institution is now going to put its fact book on the web.
- Both university and community college personnel were very cooperative in supplying needed data.
- Problems were uncovered with not storing or archiving data, having no historical data, incurring large amounts of data loss, and finding that needed data were being overwritten or purged.
- At some institutions no data element dictionary existed.
- When a college named a data element one way and another name was used for external reporting purposes, both names needed to be included in the data element dictionary to alert others to the dual name.
- At one institution, the data audit confirmed what they already knew about their data and institutional data processes for the first year of college.
- A few pilot schools encountered some resistance from the gatekeepers of the data.
- One institution found that data were available in the data warehouse, but too little training was available on how to extract useful data creating an accessibility issue.

About conducting a data audit, pilot institutions personnel found that:

- Sending out questions/request for artifacts to be collected ahead of time meant that units had them available when they came to do the interview.

- Use of worksheets aided them in the collection of information for the data audit.
- In some cases, multiple interviews were necessary with different people in offices because no single person knew what was possible.
- Results of the data audit will be used to prioritize future data needs.

Generally, pilot institutions found that the data audit:

- Uncovered questions in addition to answers.
- Identified redundancies that could be eliminated or opportunities to be studied during the next round of strategic planning.
- Will result in an institutional report back on outcomes of the data audit to the institutional management team, the President's Council, etc.
- Helped to create an institutional mindset around a total university approach—assessing our effectiveness by finding and using available data.

Use of the word "audit" scared some people.

- Use of the word "audit" scared some people.
- Made some departments relieved that they were not being singled out for review—that this was part of a larger, institution- or unit-wide, project.
- Led to increased understanding among committee members regarding what different departments do and how they fit into the overall functioning of the institution.
- Gave people an understanding that these were issues other institutions were working on.
- Was instrumental in highlighting the need for evidence in the form of data.
- Was a way to involve faculty in data use.
- Identified the need for an institutional Data Definition Committee.
- Results were, in the words of one pilot institution administrator, "strikingly consistent. Most people expressed a frustration with the difficulties encountered in trying to get data and most people wanted access to the same data and were trying to create the same types of reports—all independently with absolutely no efficiencies of scale."

Whatever the format for reporting ultimately selected, the following outputs of the data audit should be fully described:

- Data element lists and specifications including whether it is kept in text or numeric format, where the data element comes from, when it is entered or the frequency with which it is updated, how consistent is the coding, how have different units interpreted definitions (for example, does a "0" mean zero or missing?), etc.

- File structures and extract schedules including when "snapshots" of live transactional databases are taken.
- Most common uses of data on campus.
- Common reporting formats/templates.
- Review security issues.
- Review need to establish a Data and/or Security Committee.
- Locus of responsibility for maintenance and control for different kinds of data and databases.
- Recommendations on the various forms of user training needed to facilitate use of data resources.
- Recommendations for methods and approaches for collecting needed data that are not currently collected by the institution.

Existing databases focus on the needs of record-keepers, not information users.

In preparing to summarize the outputs of a data audit, it is helpful to be aware of and review some frequently encountered findings of such an exercise at other campuses. Among them are:

1. The need to reposition student databases to examine behaviors from the *student* rather than from the institutional point of view. It is not unusual for institutions to collect a lot of data on students and student behavior, but not to use this information to investigate questions like, "How did students act out the first year curriculum in terms of course-taking?" or "How many first-year students visiting academic skills centers did so more than once each term?" One reason for this situation is that existing databases focus on the needs of record-keepers, not information users. Therefore they are typically hard to access, hard to use, and organized cross-sectionally rather than longitudinally.

There is always a tendency to invent brand-new data collection efforts every time a new information need is identified.

2. Opportunities to collect data more systematically using *processes already in place* and *existing points of contact with students*. There is always a tendency to invent brand-new data collection efforts every time a new information need is identified. Also, administering surveys using different methodologies across terms and years can alter outcomes and results, which can create false perceptions of change. This situation leads to students being repeatedly surveyed. The point here is to be more deliberate about taking advantage of contacts/opportunities that are already available. Examples of these include student orientation sessions at which additional surveys might be collected, placement testing, student evaluation of instruction, and face-to-face advisement sessions. Emerging technology also provides opportunities. For example, more and more libraries, bookstores, residence halls, and student service offices are using "Smart Card" or "Card Swipe" systems to record use and attendance, creating an automatically generated record of contact and intervention for each student that can be recovered and used more

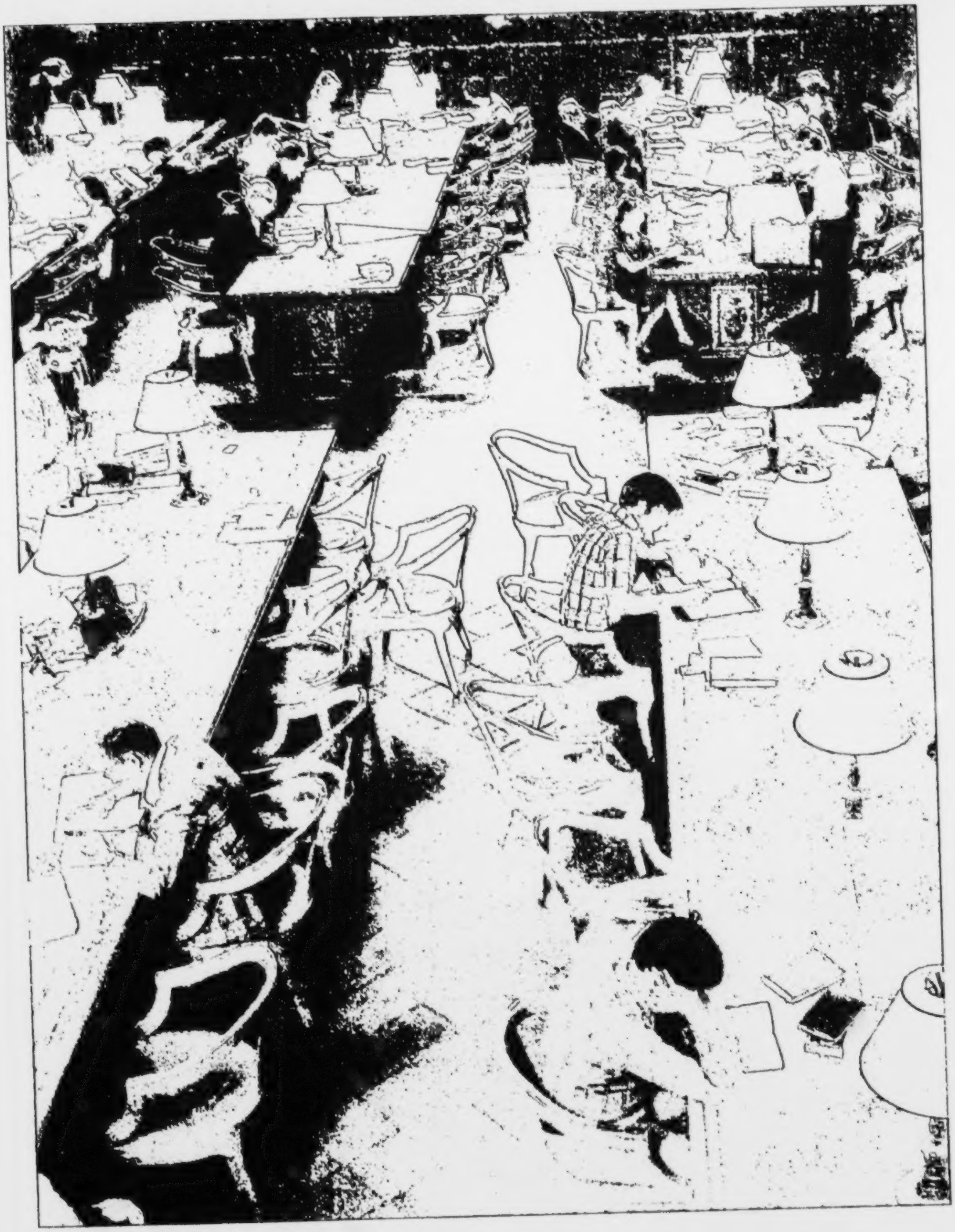
broadly. Or, for students who access offices or services online, web usage statistics are another form of data to be collected. In addition, being deliberate in gathering and using data will likely reduce duplication of effort on campus and wasted resources.

The final step is to close the feedback loop to create a true culture of data use by communicating results of the data audit of the first year of college widely and taking action based on results of the analyses.

3. Unclear or inconsistent definitions across units for similar data elements. This mismatch can occur in both directly extracted and locally constructed or calculated data elements. Every institution can benefit from having clear definitions for data elements and distributing documentation containing those definitions widely to everyone on campus. For example, offices may use different definitions of first-time students; some may use first-time, full-time undergraduates, others may use the entire population of first-time undergraduates, which would include both full-time and part-time students.
4. Self-reinforcing "spirals" of misperception on the part of those responsible for collecting/archiving data and those who seek to use it. A frequent finding of a data audit, for example, is that user communities have given up trying to obtain some kinds of data because of the difficulty of getting it—resulting in a perception by data communities that there is "no demand" for these data by users.

As you seek to summarize the results of the data audit on your campus, it is important to be sensitive to these common issues, and to be reassured that they are not unusual. Furthermore, by being open to suggestions, you may learn new avenues that data may be beneficial to all parties involved.

The final step is to close the feedback loop to create a true culture of data use by communicating results of the data audit of the first year of college widely and taking action based on results of the analyses.



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A COMMON CORE OF DATA

Common core definitions, and easy access to data, provide a consistent basis for units to conduct internal institutional analyses and external reporting.

A principal outcome of many data audits is an institutional determination to create a "common core" of data that can be used by multiple units to address similar issues or to conduct consistent investigations. Each data element in the common core has a collectively agreed-upon definition. Typically, all such data elements are maintained in an accessible database environment for use by a variety of offices and functions at the institution. Additional analytical files are often derived from the common core, which contains data periodically extracted from operational databases. Common core definitions, and easy access to data, provide a consistent basis for units to conduct internal institutional analyses and external reporting.

This section describes a recommended list of common core data elements for examining the first year of college. Such a common core usually includes data about a range of entities including students, courses, course enrollments, applicants for admission, program affiliation, participation in particular activities, faculty and staff, facilities and equipment, and resources and expenditures. In most cases, these elements will be maintained in the same formats used in the "parent" databases from which they are drawn. In some cases, however, the recommended data element is a "summary" element—derived or calculated from one or more existing data elements (for example, the total number of terms a student has been enrolled at an institution or a student's credit hour completion rate). In a few cases, recommended data elements are not collected anywhere on the campus but are sufficiently useful or important for the institution to find a way to gather them.

To be included in the common core, a particular data element should meet one of two criteria: a) it is required for important management or decision-making purposes by multiple units or departments on campus, or b) it is useful for wider institutional or unit-level planning or evaluation purposes such as program review, budgeting, or consistent external reporting. Inclusion of data elements in the common core does not necessarily imply that all of them must be held in a single database. All should, however, be defined in common and should be easily accessible to potential users.

The Toolkit's recommended contents of a common core of data to be assembled to examine the first year of college are offered as a place to start the discussion on your campus. Depending on capacity and circumstances, you will undoubtedly come up with a somewhat different list. After your institution's version of the list is agreed upon, each data element included in the common core is typically defined and documented for use by the campus community. For each element, documentation is usually provided on:

- **The definition of the element**, if the element is derived from other operational data elements or involves calculated statistics, appropriate calculation rules should be included in the definition. This requires determining the form of the data element in existing databases. (We will use "age" as an example. For the purposes of the example, we want "age" available in numeric format, two characters long.). A data element may be:
  - ✓ Present in the form required (in our example, the field would be filled with two-digit numbers).
  - ✓ Present, but in need of minor recoding (in this case, "age" would be in the field as Arabic numerals that have been entered as text with a character in front of them, often a ').
  - ✓ Present, but not in the proper structure (in this case, "age" might be found as text such as "twenty-one").
  - ✓ Not present, but can be created from a combination of existing elements (in this case, "age" is derived, or calculated, from a student's birth date and the current date).
  - ✓ Not currently present or collected in any form (this would be the case, if neither "age" nor "birth date" were gathered) and leaving no way to determine age. An example of the element being present but not useful would be if students chose from age ranges (<18 years old, 19-24 years old, >25 years old).).
- The **source and data collection procedures** used to collect the element; such documentation should include the timing of data collection, should note the instrument or procedure used to actually obtain the data, and the office(s) responsible for collecting, entering, and maintaining the data.
- The principal **clients or uses for the element**.

Each type of data in the recommended common core is briefly described below. Individual data elements recommended for inclusion under each subsection are provided in **Appendix A**. The displays in this appendix list the recommended data elements and provide additional information about each under the following headings:

- Element Name. Describes the data element using the name typically used to describe it at most institutions.

- Source. Notes the primary current source/location of the data element in existing operational databases. At some institutions it is possible to draw the complete set of data required for the common core from one source; in other situations, this is impossible. When elements are maintained separately in one or more parent systems, definitions, formats, and collection procedures should be standardized when these elements are included in the common core. Instances where some kind of reconciliation is needed should be noted under the "Comment" heading—as illustrated by several of the entries in **Appendix A**.
- Length. Indicates the anticipated character length of the data field required (for example, "age" would normally be a two-digit field, but it is conceivable that someone over 100 could one day enroll. Or, lengths of data fields for most English-based names may be too long or too short for names of students from foreign countries).
- Type. Indicates, so far as is known, whether the element is a character or numeric field. (Note: For both Type and Length, the values given are approximate. In most cases, however, they correspond to the way the element is currently maintained in the parent database from which it is extracted.)
- Comment. Used to provide brief comments on particular data elements where needed—for example, to note the source data for a required calculation or to highlight the fact that inconsistencies in coding or definition exist that need to be resolved.

Student Data Elements

This category contains standard, commonly used student descriptors of several kinds including demographics, educational background, current (and past) enrollment status at the institution, as well as academic standing and performance. Most of these data elements already reside in the student information system, but current data and/or coding structures may need to be modified. If the data audit indicates that particular needed items are not currently included in any current dataset, a means to collect these elements should be considered by your institution.

Specific comments associated with these data elements include the following (see the lists included in **Appendix A** for a comprehensive list of suggested data elements):

- Name/address. Full names and addresses for students are used principally for generating mailing labels; these elements are consequently not included in recommended analytical files, but they may be useful for other purposes. Includes a student identifier (often social security number although many institutions are choosing to create unique student identification numbers and not use SSN anymore) which is used as the link across the many databases.

- Demographics. These elements include gender, race, ethnicity, birth date, age, county of origin, place of residence, etc. (See the data element listing for a comprehensive list of suggested demographics of interest.)
- Parents' education level, occupation, and employment. Institutions do not typically collect this information. However, current literature suggests a relationship with these factors and retention, so institutions might consider including these data elements for analysis.
- Test scores. Skills testing and placement tests are key factors for success in the first year at many institutions. These data need to be drawn from whatever parent database they are kept in. Note that sometimes these data are included in the regular student information system; sometimes they are kept in a variety of other places including the placement office, assessment office, or even individual departments (usually English and math).
- Enrollment status elements. These consist of data about items like full-time/part-time status, student's entering major, and other elements that describe how the student is classified. They duplicate much of what is typically in the student information or registrar's system.
- Goal/intent elements. These indicate such things as the reason a student is seeking a degree and whether (s)he intends to complete a degree at the institution. Increasingly institutions are asking this question of their students, often when a student registers for a new term. These data elements have proven valuable at many institutions and serious consideration should be given to systematically collecting them if your campus does not currently do so.
- Financial aid elements. The level of detail collected about each student in the financial aid system may or may not be appropriate and should be thoroughly discussed, especially in the light of privacy guidelines. Full information about each aid source and amount is usually not needed. But maintaining only an aid flag in the common core may not provide the required level of detail for tracking such things as the effectiveness of financial aid packaging or the impact of growing indebtedness. One useful alternative is to create three elements: 1) financial aid fund source (e.g., state/federal/private gift), 2) financial aid fund type (e.g., grant/loan/work study), and 3) financial aid level-of-need (categories here are often assigned at the discretion of the Financial Aid office, based on characteristics of an institution's student body). Security considerations are also important when dealing with financial aid information, and you should be sensitive to the legal responsibilities of financial aid offices to protect the privacy of these records. It is usually possible, however, with tact and persistence, to work out an arrangement where some summary data elements about each first-year student can be extracted or constructed.

Course Data Elements

These elements are also, for the most part, drawn from regular student information systems. Course-level data describe the course in catalogue inventory terms such as days of the week, time, instructor, etc. and consequently will change little. Section-level data, however, will likely change each term. Section data imply, and are actively linked to, a corresponding course. Note that recommended section-level data include summary information about enrollments and other topics. When conducting a data audit on the first college year, you may want to keep only information on those courses taken by first year or lower-division students.

Specific comments associated with these data elements include the following:

When conducting a data audit on the first college year, you may want to keep only information on those courses taken by first year or lower-division students.

- Prerequisite/co-requisite courses. Although these data are frequently carried by regular student information systems, they are just as often maintained elsewhere. Departments, schools, and colleges often create their own records for prerequisite and co-requisite checking required for both internal management and external reporting purposes.
- Key links. In order to use data elements from different databases, each database should include a field or set of fields that uniquely identifies each record stored in the database. This information is called the key link. For courses, Course Department, Course Number, and Course Section Identifier are usually maintained as key links among databases. These should be examined carefully to determine if they are indeed the appropriate key links to use, and if they are defined and maintained consistently across departments and units.
- Percent instructor assignments. These data elements address how much of a given instructor's time or load is demanded by the course/section in question. Often this information is maintained in registration databases, but equally often it is maintained separately by department, or kept manually in a Dean's or Academic Affairs office. This data element is useful in answering questions such as, "How many first-year students have full-time professors as instructors?"

Course Enrollment Data Elements

These data elements document individual interactions between a particular student and specific course section like grades and credits earned or whether the student dropped the course. Consequently, they are often termed "course/person" data elements. The intent of these student and course data combinations is to obtain a more complete picture of each enrollment. Such data elements are particularly useful in constructing analyses of course-taking patterns or of the potential for peer contact and interaction in the classroom by systematically presenting data on the number of lecture courses and laboratory or team environment courses students take. Like section data, these data elements include a range of summary items useful in examining course performance. Many large universities conduct these types of analyses in order to "manage" their general education offerings. These analyses are also quite useful for medium and smaller sized institutions as well.

Admissions Data Elements

Admissions data elements document individual applicants to the institution and usually mirror the data already kept in regular admissions and student information systems. The same comments apply to these data elements as to the student data elements already described. Also, the level of detail for admissions monitoring should be carefully examined because different kinds of students—such as athletes, artists, or musicians—often go through different admissions processes. Many students, therefore, may have different levels of detail in their records about such things as high school coursetaking and performance. Because these data are often particularly useful for analyzing the first year of college, serious consideration should be given to obtaining and loading such data for *all* first-year students on a one-time basis.

Admissions data elements usually mirror the data already kept in regular admissions and student information systems.

Co-Curricular or Extracurricular Data Elements

Because the first year of college focuses on co-curricular and extracurricular activities and programs, particularly orientation programs, it may be useful to keep information about participation in a database. Of interest here are residence life, involvement with student organizations, leadership programs, athletics and intramurals, involvement in volunteer work, or participation in service learning.

Personnel Data Elements

These describe individuals employed by an institution—both instructional and non-instructional—and the nature of their relationship with the institution. These data elements will give a fuller picture of who teaches, advises, and otherwise works with first year students. Elements noted for "all employees" apply to both instructional and non-instructional staff as well, with those described under "instructional staff" intended to be applied only additionally to faculty and instructors. It is recommended that all employees—including part-timers—eventually be included in this structure. Note, though, that data about part-time or grant-supported personnel are frequently maintained in separate personnel systems.

Data about part-time or grant-supported personnel are frequently maintained in separate personnel systems.

Important issues here are security and compatibility with other data files. The data elements listed come primarily from established institution-level personnel systems. Many elements also included in the student information system and other personnel databases (such as databases on adjuncts) may not correspond to these definitions. If the audit determines that this is the case, a common data element structure should be developed. Many of the recommended personnel elements also raise issues of privacy and security. As a result, consideration should be given to providing controlled access to these fields on an element-by-element basis.

Specific comments associated with these data elements include the following:

- Key link. Social Security Number (SSN) is proposed as the primary key link for both employees and students, but any common identifier can be used as long as it is consistently applied. In some cases, institutional policies restrict the use of SSN in this manner, and you should check specifically with the personnel and registrar's offices to see if this is the case. Some institutions have a locally generated "instructor code" that identifies a single person consistently throughout institutional databases.
- Demographics. These elements provide typical descriptors of faculty and staff. They are especially useful in a first-year context to help determine the kinds of individuals that first-year students are exposed to—for example, the degree to which students of color are likely to find peers or whether regular faculty are teaching first-year classes.
- Experience. Data should be maintained that would allow access to a full faculty vita; many institutions find such data extremely useful not only in themselves but to profile the kinds of faculty and staff who interact most frequently with first-year students. To do so, keep a word processing document with vitas that can be linked via a keyword (for instance, personnel number) to a particular individual.
- Appointments. At some institutions, there is a distinction between the department of appointment and the department of assignment. Efforts need to be made to capture these distinctions. In addition, care must be taken to capture appointment information from all sources (e.g., regular appointments, grant-funded appointments).

An important issue here is the compatibility of data structures with other systems.

Another important question is what level of detail should be maintained for analytical purposes.

Finance Data Elements

These elements provide data on the status of individual accounts and are drawn from finance systems. Like the personnel data elements described previously, an important issue here is the compatibility of data structures with other systems. Another important question is what level of detail should be maintained for analytical purposes. In analyzing the first year of college, for example, relevant finance questions typically have to do with the personnel costs associated with delivering first-year classes and programs, so initial attention should be devoted to data elements that bear on these questions.

Physical Facilities Data Elements

These provide data on the condition and characteristics of individual instructional spaces. They will be especially useful in supporting studies of the physical environments typically encountered by first-year students. For example, does instruction of first-year students primarily occur in large lecture halls? Or, do first-year students often face daunting distances between their classes held back-to-back?

Summary

In summary, to be included in the common core, a particular data element should meet one of two criteria. It should either be required for important management or decisionmaking purposes by multiple units or departments on campus, or for wider institutional or unit-level planning or evaluation purposes. Documentation should be provided on a) data element definitions, b) source and data collection procedures, and c) clients or uses for each element. Then, list for each data element the element name, its source, length, type, and any comments about the data element. Eight types of data elements are common: student, course, course enrollment, admissions, co-curricular or extracurricular, personnel, finance, and physical facilities.

Does instruction of first-year students primarily occur in large lecture halls ?

BUILDING A LONGITUDINAL TRACKING CAPABILITY

As noted in the Toolkit's first section, a fundamental shift of perspective is required in determining "what happened" and "what mattered" in the first year of college that involves moving from a cross-sectional to a longitudinal perspective. Most data about students—whether maintained in the regular student records system or collected through questionnaires or interviews—are organized in terms of the point in time they were gathered. Thus, student record systems are structured by term (quarter or semester), with student enrollment records distinguished from one another in this manner. Similarly, questionnaire data are typically maintained in separate files—one for each survey administered.

The conceptual requirements for tracking students over time are straightforward but may be difficult to fulfill in practice.

What we really want for analysis, though, are data organized by *student*—analogous to a transcript that assembles data about what happens to them *over time*. Data of this kind enable us to really get inside the first-year student experience to examine such things as patterns of retention and interrupted enrollment, the order in which courses are taken and completed (or dropped), and any association between academic success and participating in particular kinds of programs, activities, or interventions. For example, we may be especially interested in questions like the effectiveness of current basic skills placement policies at the institution, or the relative effects on student retention of participation in a first-year-seminar-type course. Doing this requires us to draw data not only from multiple sources but also at multiple points in time in a given student's career. How to approach this task is briefly addressed in this section of the Toolkit.

The Conceptual Basis of Student Tracking

The conceptual requirements for tracking students over time are straightforward but may be difficult to fulfill in practice. Minimally, however, two capabilities are required: a) creation of a comprehensive longitudinal picture of student progress that reflects the manner in which students of different kinds move into, through, and out of the institution; and b) identification of a number of distinct behavioral groups of students (for example, part-time, single parent females whose goal is entry-level employment) described in terms of cross-cutting characteristics (in our example, part-time, marital status, gender, number of dependents, goal).

Satisfying the first requirement demands a conceptual scheme that represents student progress through the institution as a set of linked events and decisions. **Figure 5** presents an overview of such a model for students who progress through their first year of college. The model contains distinct components for both admissions and student behavior once enrolled, but the two are linked in order to represent respective or simultaneous impacts in each of these phases. The logic of the model is to represent student progress as a series of discrete decision points and experiences through which each student must pass. Furthermore, decision points are of two distinct types—those under the control of the student and those determined by institutional actions or policies. Matriculation rate, voluntary withdrawal, and participation in various types of first-year programming are examples of the former, while acceptance rate, mandatory placement, and academic good standing are examples of the latter. Together, these experiences and decision points constitute a complete chain of events that operate in concert, and that determine the status of a particular group of students at a particular point in time.

Models are of limited value if they do not take into account the vastly different kinds of students typically found in an entering first-year population.

Such models are of limited value, however, if they do not take into account the vastly different kinds of students typically found in an entering first-year population. Different kinds of students may behave in systematically different ways. Therefore, it may be necessary to examine longitudinal progression separately for different types of students. But what kinds of differences are important and how should such subpopulations be defined?

Institutional researchers traditionally break down student populations in two ways—demographically and by program area. Such breakdowns are generally done one at a time. Statistics for items like first-to-second-term retention, for example, are commonly calculated and reported separately for males and females, for older and younger students, or by department or major. While this approach will certainly provide some insight, real behavioral groups of students more often consist of combinations of such factors. An African-American male who is 18 to 21 years old and seeking entry-level occupational skills, for example, may have a far different set of expectations and experiences than a female liberal arts student attending part-time during the day to fulfill general education requirements. Appropriate analytical groups are, therefore, best identified by disaggregating total enrollment by a number of crosscutting variables in combination. What those crosscutting variables might be depends on an institution and its particular student body. In some cases, race and/or ethnicity by program area will be important. In other institutions, residence and gender will be of importance. (For references see Tinto (1987), Beal and Noel (1980), Pascarella and Terenzini (1991).) The choice of which variables to use will depend on both the nature of the institution and the characteristics of the first-year population under study. **Figure 6**, for example, shows such a multiple disaggregation for a small rural community college. The disaggregation shown in **Figure 6** was accomplished by combining data for all students and then sorting by different groupings until five distinct groups of students that captured most of the entire student body were determined.

The right-hand side of this breakdown represents a set of logical possibilities for cross-cuts among a set of five demographic and enrollment variables (location, program, time, status, gender); rarely will all such logical possibilities contain substantial numbers of first-year students. Rather, students tend to cluster in certain categories, and these can then be reaggregated for analytical purposes. In the example shown, 96.2% of the population is accounted for by the five distinct behavioral groups of students listed at the bottom of the figure. Each of these groups, once identified, was studied separately. This was important in this case because it turned out that the factors responsible for persistence and academic success for each group were different. A "generic" student success program would, therefore, have made little sense and would likely have had little impact.

A "cohort" is a group of students who entered the institution at the same point in time.

The Data Requirements of Student Tracking

Most institutions conduct longitudinal studies of entering students by creating discrete files for entering "cohorts" of students. A "cohort" is a group of students who entered the institution at the same point in time—for example, Fall 2001 or Spring 2002. Cohort-based files contain a student-by-student enrollment history for members of the cohort over a designated number of consecutive terms, drawn from the "common core" of recommended data elements described earlier. The data in such files enables us to answer the question, "What is the enrollment pattern of each individual in the cohort?" To construct a file to answer this particular question would depend upon the availability of both student-record and questionnaire-based information, as described in the previous section, on a term-by-term basis for the first year of college and beyond.

Most longitudinal data files of this kind share a number of characteristics. Every entering student is assigned to a cohort, based upon his or her first term of academic history, and the student remains a member of that cohort thereafter. Separate files are typically maintained for each cohort, and all analysis and reporting is typically accomplished on a cohort basis. Cohorts may be identified in a number of ways. The definition of cohort used at your institution must be used consistently. One way to define cohorts is that they are a group of students identified by first term of active (at least one credit hour) enrollment history at the institution. Complete cohorts of students entering in a particular term, rather than samples, are generally used in order to provide credible program-level statistics.

The structure of cohort data files involves assembling data elements of several different kinds (see **Figure 7**), drawn from the recommended common core (see **Appendix A**). A first set of data elements, drawn largely from registration and admissions records, is compiled once—at time of entry—and comprises the first portion of each longitudinal student enrollment record. Types of data elements generally included in this "fixed" portion of the record are data on demographics, on educational background, on basic skills and need for remediation, and on initial enrollment status. Additional data elements are then added to this basic record at multiple points for each subsequent term that the student is enrolled. One set of elements is drawn from term enrollment files at the time of official census date, and reflects student enrollment behavior up to that point. Types of data elements included are usually program and hours attempted in coursework, remediation status, and remediation performance. Another set of data elements is captured at the *end* of the term and includes such things as course completion, academic performance, and basic skills levels attained. A third set of data reflects the various experiences that a student may have engaged in during the term—for example, participation in tutoring or counseling sessions, study-group membership, or first-year-experience programs. Such data, as noted earlier, are typically derived from surveys or from the records of individual student-service and academic units.

The longitudinal file layout shown in **Figure 7** is documented as though it was composed of "fixed-length" records—one for each student in each cohort. This means that all of the information for a given student is maintained in a single record, with portions of the record corresponding to potential terms of enrollment. If a student is not enrolled for a given term, the portion of the record corresponding to that term is left blank. The assumption of a fixed-format record structure is usually made for ease of communication and to facilitate the use of commercial statistical packages in generating reports and manipulating data. But this is not the only way such data files need be constructed. Many analysts maintain term data in separate files, for example, and link them together only when they are needed to conduct a particular kind of study. The actual method used will depend on local computing arrangements, software, and the preferences/experiences of those conducting the analyses. But the conceptual requirements of cohort-based organization and a data file consisting of a set of sequenced term-based "snapshots" of student behavior remain unchanged.

One question that commonly arises is which types of students should be included in analyses. Because many non-traditional students are single-term enrollees, some institutions elect to include only those students who are seeking degrees, or only those who express an intention to persist for more than one term when they look at experiences during the first year of college. Others include all students, with the provision that nontraditional students can be separated out for analysis at a later point.

Summary

In order to build a longitudinal tracking capability, data organized by student are needed. This structure allows researchers to examine the first year of college including patterns of retention and interrupted enrollment, the order in which courses are taken and completed (or dropped), and any association between academic success and participating in particular kinds of programs, activities, or interventions. The conceptual requirements for tracking students over time are straightforward but may be difficult to fulfill in practice. Two capabilities are required. The first is creation of a comprehensive longitudinal picture of student progress that reflects the manner in which students of different kinds move into, through, and out of the institution. The second is identification of a number of distinct behavioral groups of students described in terms of cross-cutting characteristics.

The conceptual requirements for tracking students over time are straightforward but may be difficult to fulfill in practice.

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ANALYZING DATA

One reason for assembling comprehensive databases about the first year of college is that we do not always know exactly how the data will be analyzed. As a result, we need a flexible store of data, ready to be tapped rapidly in response to a variety of questions as they come up, and capable of quickly disaggregating, or segmenting, results for different student populations for comparison. In such situations, the specific analyses to be undertaken cannot be fully predicted in advance. However, particular kinds of analyses and indicators related to the first year of college can be foreseen. It is frequently a good idea to develop a capacity that allows such reports to be generated automatically for both the entire first-year population and for designated subsets of that population. This section (and its related appendix) briefly addresses both kinds of reporting and provides some reporting templates that illustrate the latter capability.

A first question is what should be the focus of such analyses? Valuable studies of what happens to students in the first year of college can be categorized around the following types of studies:

- Overall Student Flow. The object of such analyses is to determine overall patterns of enrollment, persistence, stopout (when a student temporarily withdraws from an institution (Tinto, 1987)), and reenrollment for particular types of students. Classic statistics like "fall-to-fall retention rates" (which calculate the proportion of a given entering cohort of students that returns to the institution for a second year) and "degree-completion rates" (which calculate the proportion of an entering cohort that completes a degree or credential within a designated period of time) are commonly reported results of such analyses (see "Term-to-Term Progression Report" in **Appendix B**). More specialized analyses, within the first year of college, based on the same principles include term-to-term persistence rates, within-term course withdrawal rates, or "stopout" studies intended to look at whether students withdraw for a period of time and then reenroll. Such analyses are usually most useful when they are conducted in parallel for different types of students—for example, students drawn from different demographic or enrollment status groups.

- Overall Academic Performance. Analyses of this kind are similar in design to overall student flow studies, but concentrate on how well different kinds of students perform in their coursework (see "Summary Progress Reports" in **Appendix B**). While grade-point average is frequently used as a dependent variable in such analyses, other kinds of performance variables are equally appropriate including such measures as the proportion of credits enrolled for that are successfully completed, the proportion passing all courses (or a particular key course or set of courses) with a "C" grade or better, or the proportion remaining in academic good standing. A particular topic of interest here for the first year is student success in remedial or developmental courses and/or performance in collegiate skills courses like English Composition or a variety of mathematics courses. Again, such studies are most valuable when the overall performances of different groups are compared with one another.

- Patterns of Experience. Somewhat more complicated to accomplish, but often very revealing, are analyses designed to investigate what happened to particular types of first-year students in detail. One prominent example is course-taking studies (see "Coursework Status Reports" in **Appendix B**) that look at such things as the order in which particular courses are taken (and, more particularly, whether designed prerequisite sequences are followed), the length of time elapsed between taking a particular skills-development course and when the skill in question is first applied (math skills, for example, can atrophy rapidly if they are not applied promptly in subsequent coursework), or the extent to which students are taking coursework across a wide variety of fields rather than taking a related body of courses simultaneously (that is, breadth vs. depth). Analyses of this kind are again particularly applicable to basic skills or remedial course sequences, which are usually designed to be taken in a particular order.

  Another important factor of experience to be investigated is student credit loads, which may vary considerably both during and across terms. Sometimes students "shop" for courses during an add-drop period in order to identify those they find most appealing (or think they can pass easily). Other students may "over-enroll" by attempting more courses than they might be able to complete (ironically, this is sometimes a "catch-up" strategy practiced by students who have failed to complete one or more courses in their first term of enrollment and that often puts them further at risk). A final dimension of experience concerns the out-of-class or co-curricular experiences that students may have engaged in. If data are available about such things as participation in tutoring, formally organized study groups or learning communities, or whether students visit academic skills and counseling centers, they can be used to create portraits of both overall participation in such experiences and their effectiveness.

- Early-Warning. Slightly more sophisticated are analyses that try to put all of these data together to create indicators of potential academic difficulty. For example, analyses of past cohorts of entering students may reveal patterns of association between particular clusters of incoming student characteristics and later academic difficulty, interrupted enrollment, or particular sets of course-taking behaviors. These characteristics can cluster around social risk, academic risk, etc. If these prove statistically robust, they can be used to help create profiles of "at-risk" students whose progress might be more carefully monitored from the outset. When engaging in such studies, though, it is always important to remember that they are based on statistical tendencies, not preordained "fact." It is therefore critical to use such indicators judiciously and appropriately.

- Program Effectiveness. Another way to put all of these data together is to try to answer questions about the relative effectiveness of particular aspects of the first year of college in promoting persistence or academic performance. Examples might include the effectiveness of student participation in voluntary orientation programs or study groups on such outcomes as fall-to-fall retention, course completion rates, or overall grade performance. More narrowly-defined examples include the relationship between enrollment and performance in collegiate-skills-building classes like composition and math, and related later coursework that requires such skills (see "Coursework Placement/Effectiveness Reports" in **Appendix B**). Longitudinal data files are critical for accomplishing such studies because experiences occurring at one point in a given student's enrollment history need to be associated with measures taken at a later point. Again, when conducting such analyses, it is important to remember that what works for one kind of student may not work for others—so disaggregation is important. It is also important to try to disentangle the many factors that may be at work. For example, the apparent "effectiveness" of a particular program element may simply be a result of the fact that certain kinds of students participate, not because the program is inherently beneficial.

Many variations on these basic types of analysis are possible, and they can be combined in multiple ways to yield valuable tools for understanding the impact of the first year of college. Note that undertaking customized "as-needed" studies like these is not the only way a "common core" of data assembled in a longitudinal database structure can be utilized. Indeed for ease of use and access, many institutions choose to preprogram a set of standard report templates that can be automatically generated using commercially available software packages (like SAS, SPSS, Excel, and Access). Typically, such reports are designed to summarize the status and behavior patterns of a particular cohort of first-year students. They are usually set up in a "matrix" or tabular form in which the columns of the report represent performance variables (like the percent of an entering cohort retained in the second term or the proportion completing key courses with a grade of "C" or better), and the rows of the report represent specific characteristics of the student body (like gender, entering academic skill level, or whether the student participated in various first-year experiences). Examples of some of the most commonly used reports of this kind are provided in **Appendix B**, together with documentation that indicates how each of their entries should be constructed.

Once they are set up, basic reporting templates like these can be easily modified and replicated for different populations. More importantly, using the population selection capabilities of commercially available statistical packages, they can be generated automatically for any first-year population that can be defined in terms of combinations of data elements in the database. This disaggregation enables analyses that "drill down" into the first-year student population to examine exactly how particular types of students experience the curriculum and co-curriculum, and how the impact of these experiences on students may differ. For example, to investigate the impact of a particular intervention (participation in a student orientation program) an analyst could run a standard report showing academic performance twice—once for students who participated in the program and once for those who did not—and compare the results. Because the row variables in both cases are the same, the comparative impact of the program intervention can be examined for each type of student included.

More sophisticated kinds of data analyses using the common core or longitudinal files can also be undertaken using multivariate statistical techniques like regression and cluster analysis. These techniques allow the independent effects of particular variables to be investigated after controlling for various other factors. This useful capacity can be used to sort out such questions as whether participation in a first-year program mattered or whether any changes in student success observed were really due to the characteristics of the students who participated. In summarizing the results of analyses for decisionmakers and program participants, though, it is usually wise to present data in tabular or graphic form. As a result, many analysts use multivariate statistical techniques to explore and make sense of the data they are examining, and then communicating what they find in relatively straightforward terms, foregoing the presentation of all of the statistical manipulation that went into key findings. Nevertheless, should those statistical calculations be of interest, analysts will have them available "in their back pockets" for sharing and consultation.

CONCLUSION

Embarking on a data audit designed to support and improve the first year of college is a significant step for any campus. Hopefully, the data audit will lead in the direction of a more comprehensive and intentional approach to collecting and analyzing information about the first year of college. In undertaking it, we want to reemphasize some of the points made at the outset of this Toolkit.

Embarking on a data audit designed to support and improve the first year of college is a significant step for any campus.

First, always remember that "truth" lies in the variations. Real people with real differences make up the first-year population at any college, and the same is true of all our faculty and staff. So avoid being misled by averages and other "central tendency" results that are meant to apply to *all* students and situations. Instead, disaggregate the data as far as you can to uncover the many differences in experience and situation that probably exist.

Second, results of assessments and evaluations are almost always more useful in generating further questions and in stimulating reflective faculty/staff conversations than in "making judgments" about program performance. It will always be important to use available data to create occasions for further reflection and conversation about collective action, rather than employing data to point fingers and blame units or individuals for shortfalls in performance. Indeed, the metaphor of *scholarship* is usually effective in such situations: the object of evaluation is nothing more than to turn the tools and habits of systematic investigation that we were all trained to practice in our disciplines onto our own core enterprise of facilitating student success. Like scholarship in any field, the process of gathering and analyzing data about the first year of college should be open, deliberative, systematic, and ongoing—never really completed.

The process of gathering and analyzing data about the first year of college should be open, deliberative, systematic, and ongoing—never really completed.

Third, consistent with the view that engaging in assessment and evaluation is a profoundly *educative* act, students should be involved in the process as fully as possible. The best data systems are designed not only to provide evidence to decisionmakers but also to enable feedback and intervention in individual cases. Indeed, the data audit process may uncover numerous opportunities to communicate information back to students about their own strengths and weaknesses, or to introduce such information into the advisement relationship. At the program level, moreover, student participation in the process of interpreting evaluation results is often especially valuable. For example, focus groups of students are frequently useful in helping to interpret observed patterns of student behavior or to provide in-depth commentary on survey results.

Those engaged in assessing and evaluating first-year-of-college programs should always bear in mind that no matter how good things are (or you think they are), they can always be improved.

Fourth and finally, the mindset required for sustaining such projects in the long term is one of continuous improvement. Those engaged in assessing and evaluating first-year-of-college programs should always bear in mind that no matter how good things are (or you think they are), they can always be improved. Finding the ways in which this can be accomplished is about details, not about "silver bullet" solutions that try to change everything at once. Real improvements take place by identifying and addressing individual classes of problems occurring for particular types of students all over the place. The mindset that such improvement is a *collective responsibility* in pursuit of a *common goal*—student success in the first year of college—is critical to this process, as is a common store of usable information. Hopefully, this Toolkit will be of help in creating or strengthening this resource.

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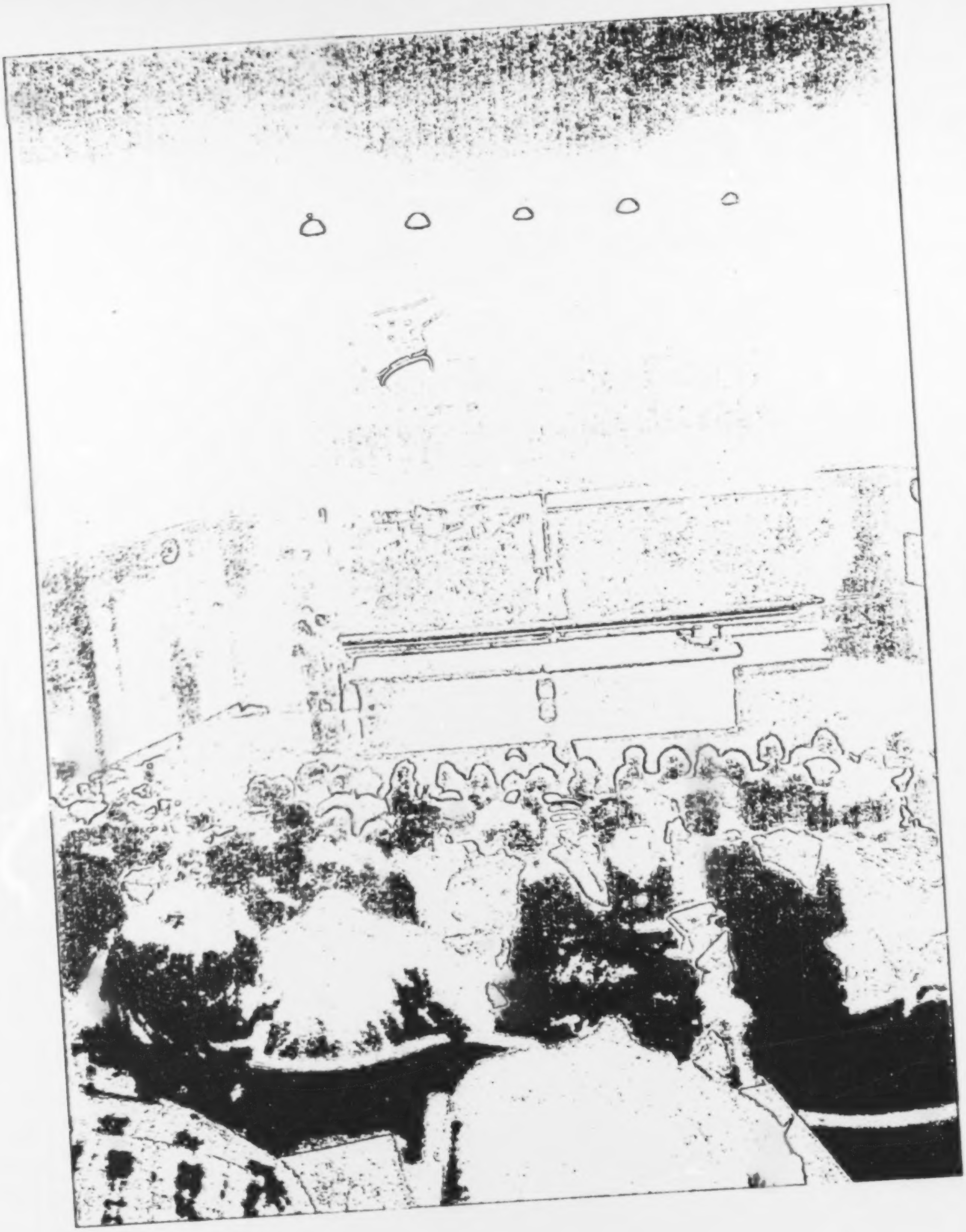

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GLOSSARY

Anonymity (provision for): "Evaluator action to ensure that the identity of subjects cannot be ascertained during the course of the study, in study reports, or in any other way (Joint Committee on Standards for Educational Evaluation, 1994)." "Only when the sponsor cannot identify each person's response, even momentarily, is it appropriate to promise that a response is anonymous (Dillman, 2000, p. 163)."

Confidentiality: "Answers are confidential. This statement conveys an ethical commitment not to release results in a way that any individual's responses can be identified as their own (Dillman, 2000, p. 163)."

Data: "Material gathered during the course of an evaluation that serves as the basis for information, discussion, and inference (Joint Committee on Standards for Educational Evaluation, 1994)."

Data Audit: The process of identifying data resources and uses wherever they may be within an institution and gathering them into a useable information system.

Data Element: Single, individual piece of data such as "name" or "race."

Face Validity: "The extent to which an instrument looks as if it measures what it is intended to measure (Nunnally, 1970)." "An instrument has face validity if decisionmakers and information users can look at the items and understand what is being measured (Patton, 1984)." "It is obvious, on the face of it, that the proposed procedure is the best way of measuring the phenomenon of interest (Rutman, 1984)." "Apparent validity, typically of test items or of tests; there can be skilled and unskilled judgments of face validity. Highly skilled judgments come pretty close to content validity, which does require systematic substantiation (Scriven, 1991)."

Footprint Data: Data that is gathered from a student or faculty member in the normal course of interacting with a postsecondary institution—e.g., data gathered on an admissions form, or on a form to have access to library resources.

Goal: "A statement, usually general and abstract, of a desired state toward which a program is directed (Rossi and Freeman, 1993)." "An end that one strives to achieve (Joint Committee on Standards for Educational Evaluation, 1994)."

Guerrilla Database: An unofficial database not normally known to the larger institution—e.g., database of student teacher experiences and mentors for Education students.

Information: "Numerical and nonnumerical findings, renderings, or presentations—including facts, narratives, graphs, pictures, maps, displays, statistics, and oral reports—that help illuminate issues, answer questions, and increase knowledge and understanding of a program or other object (Joint Committee on Standards for Educational Evaluation, 1994)."

Needs Assessment: "Systematic appraisal of the type, depth, and scope of a problem (Rossi and Freeman, 1993)." "…is a process for discovering facts about the functions or dysfunctions of organisms or systems; it's not an opinion survey or a wishing trip (Scriven, 1991)."

Objectives: "Specific, operationalized statements detailing the desired accomplishments of a program (Rossi and Freeman, 1993)" "Something aimed at or striven for, more specific than a goal (Joint Committee on Standards for Educational Evaluation, 1994)."

Official Data: Data reported to federal or state agencies that must be exactly replicable.

Policy Significance: "The significance of an evaluation's findings for policy and program development (as opposed to their statistical significance) (Rossi and Freeman, 1993)."

Sensitivity Analysis: The systematic analysis of the influence of various input values on the output of a model.

Snapshots: To freeze data from a transactional database by capturing it at one particular time.

Stakeholders: "Individuals or groups who may affect or be affected by program evaluation (Joint Committee on Standards for Educational Evaluation, 1994)."

Transactional Database: A live database used to conduct interactions between humans and electronic databases, e.g. registration system.

Triangulation: "The use of multiple sources and methods to gather similar information (Joint Committee on Standards for Educational Evaluation, 1994)."

Unit of Analysis: "The least divisible element on which measures are taken and analyzed (Joint Committee on Standards for Educational Evaluation, 1994)."

Unofficial Data: Data that may not necessarily be replicable.

Utility: "The extent to which an evaluation produces and disseminates reports that inform relevant audiences and have beneficial impact on their work (Joint Committee on Standards for Educational Evaluation, 1994).

FIGURES

FIGURE 1
EXPECTATION EXERCISE

From *Regional State University*

RESULTS FROM
THE ACADEMIC LEADERSHIP RETREAT 2001

National Survey of Student Engagement Question:

In your experience at your institution during the current school year, about how often have you done each of the following?

	Freshmen			Senior		
	Predicted	**Ideal**	**Actual**	**Predicted**	**Ideal**	**Actual**
a. Asked question in class or contributed to class discussions	1.96	3.36	2.69	2.81	3.72	3.32
b. Made a class presentation	1.62	2.68	2.20	2.77	3.46	2.93
c. Prepared two or more drafts of a paper or assignment before turning it in	1.53	3.24	2.94	2.27	3.42	2.61
d. Worked on a paper or project that required integrating ideas or information from various sources	1.95	3.28	3.22	2.74	3.61	3.32

"Predicted" were predicted by a faculty group prior to seeing actual results.

"Ideal" were projected by a faculty group prior to seeing actual results.

"Actual" are actual student results from that institution for 2001.

FIGURE 2
Student Services for Online Learners Beyond the Administrative Core

The purpose of using this "web" in the Data Audit and Analysis Toolkit is to illustrate the variety, breadth of and interactions among student services on a typical college campus.

This figure is used by permission from the Western Cooperative for Educational Telecommunications Learning Anytime Anyplace Partnership project. The goal of that project is to design student services beyond the administrative core. To reach a common understanding about what was meant by student services for purposes of the project, the partners divided services needed by online learners into five clusters or suites: administrative core services, academic services, communications services, personal services, and student communities services.

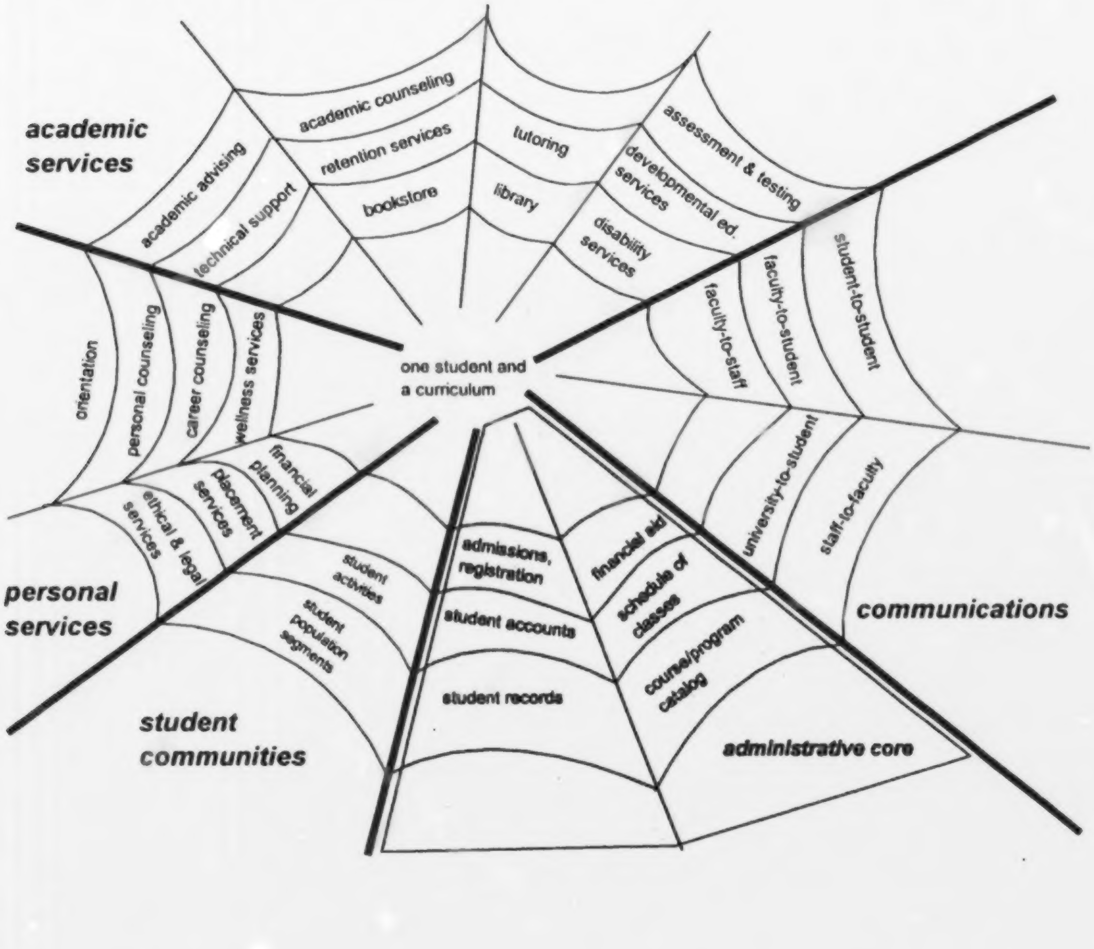
academic services
academic counseling
retention services
bookstore
academic advising
technical support
tutoring
library
assessment & testing
developmental ed. services
disability services
student-to-student
faculty-to-student
faculty-to-staff
university-to-student
staff-to-faculty
communications
one student and a curriculum
orientation
personal counseling
career counseling
wellness services
financial planning
placement services
ethical & legal services
personal services
student activities
student population segments
student communities
admissions, registration
student accounts
student records
financial aid
schedule of classes
course/program catalog
administrative core

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FIGURE 3
Student Affairs Offices and the Types of Data They Might Keep

- *Academic Services*
  - Academic Advising
    - Academic Records/Grades
    - Academic Support Office Use by Students and Other Groups
    - Admissions
    - Assessment Data
    - Athletics
    - Course Information
    - Disability Information
    - Documents
    - Field Placement
    - Institutional Research
    - Internships/Cooperative Education
    - Learning Center Use
    - Placement Data
    - Prerequisite Information
    - Registration
    - Scholarship/Grants
    - Service Learning
    - Special Studies and Reports
    - Student Information System
    - Student Life Data
    - Surveys
  - Academic Counseling
    - Academic Records/Grades
    - Academic Support Office Use and Data
    - Admissions
    - Assessment Data
    - Athletics
    - Course Information
    - Disability Information
    - Documents
    - Field Placement
    - Housing
    - Institutional Research
    - Internships/Cooperative Education
    - Learning Center Use
    - Placement Data
    - Prerequisite Information
    - Registration
    - Scholarship/Grants
    - Service Learning
    - Special Studies and Reports
    - Student Information System
    - Student Life Data
    - Surveys
  - Assessment and Testing
    - Academic Records/Grades
    - Academic Support Office Use and Data
    - Admissions
    - Assessment Data
    - Course Information
    - Documents
    - Field Placement
    - Institutional Research
    - Internships/Cooperative Education
    - Learning Center Use
    - Placement Data
    - Prerequisite Information
    - Registration
    - Special Studies and Reports
    - Student Information System
    - Surveys
  - Bookstore
    - Course Information
    - Documents
    - Faculty/Personnel Information
    - Course Syllabi and Textbook Use
  - Developmental Education Services
    - Academic Records/Grades
    - Academic Support Office Use and Data
    - Admissions
    - Assessment Data
    - Athletics
    - Course Information
    - Disability Information
    - Documents
    - Field Placement
    - Housing
    - Institutional Research
    - Internships/Cooperative Education
    - Learning Center Use
    - Placement Data
    - Prerequisite Information
    - Registration
    - Special Studies and Reports
    - Student Information System
    - Surveys

- Disability Services
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Housing
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Surveys
- Library
  - Course Syllabi and Textbook Use
  - Documents
  - Library Use
  - Special Studies and Reports
  - Surveys
- Retention Services
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Institutional Research
  - Internships/Cooperative Education
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Scholarship/Grants
  - Service Learning
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Technical Support
  - Academic Support Office Use and Data
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Tutoring
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research
  - Learning Center Use
  - Placement Data
  - Prerequisite Information
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys

Administrative Core

- Admissions, Registration
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research
  - Placement Data
  - Registration
  - Scholarship/Grants
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys

- Course/Program Catalog
  - Academic Records/Grades
  - Accreditation
  - Admissions
  - Course Evaluations
  - Course Information
  - Documents
  - Facilities, particularly Classroom, Computer, and Laboratory Setup
  - Faculty/Personnel Information
  - Institutional Research
  - Prerequisite Information
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Surveys
- Financial Aid
  - Business Affairs
  - Financial Aid Information
  - Institutional Research
  - Scholarships/Grants
  - Surveys
- Schedule of Classes
  - Course Information
  - Documents
  - Facilities, particularly Classroom, Computer, and Laboratory Setup
  - Faculty/Personnel Information
  - Prerequisite Information
- Student Accounts
  - Business Affairs
  - Special Studies and Reports
  - Student Information System
  - Surveys
- Student Records
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research
  - Placement Data
  - Registration
  - Scholarship/Grants
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys

Communications

- Faculty-to-Staff
- Faculty-to-Student
- Staff-to-Faculty
- Student-to-Student
- College-to-Student

Personal Services

- Career Counseling
  - Career Placement Information
  - Documents
  - Field Placement
  - Institutional Research
  - Internships/Cooperative Education
- Ethical and Legal Services
  - Judicial Proceedings
- Financial Planning
  - Business Affairs
  - Financial Aid Information (limited)
  - Special Studies and Reports
  - Student Information System
  - Surveys
- Orientation
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research
  - Placement Data
  - Prerequisite Information
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Personal Counseling
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Athletics
  - Counseling Information
  - Disability Information
  - Documents
  - Institutional Research
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys

- Placement Services
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Assessment Data
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Field Placement
  - Institutional Research
  - Internships/Cooperative Education
  - Placement Data
  - Registration
  - Scholarship/Grants
  - Service Learning
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys
- Wellness Services
  - Academic Records/Grades
  - Academic Support Office Use and Data
  - Admissions
  - Athletics
  - Course Information
  - Disability Information
  - Documents
  - Institutional Research
  - Learning Center Use
  - Registration
  - Special Studies and Reports
  - Student Information System
  - Student Life Data
  - Surveys

Student Communities

- Student Activities
  - Athletics
  - Campus Ministry Participation
  - Cultural Events or Lectures
  - Documents
  - Housing
  - Membership/Participation in Student Activities
  - Service Learning
  - Sorority and Fraternity System Participation
  - Special Studies and Reports
  - Surveys
- Student Population Segments
  - Athletics
  - Campus Ministry Participation
  - Cultural Events or Lectures
  - Documents
  - Housing
  - Membership/Participation in Student Activities
  - Service Learning
  - Sorority and Fraternity System Participation
  - Special Studies and Reports
  - Surveys

FIGURE 4
Academic Affairs Units and the Types of Data They Might Keep

Academic Departments

- Academic Records/Grades
- Academic Support Office Use and Data
- Admissions
- Assessment Data
- Course Information
- Course Syllabi and Textbook Use
- Disability Information
- Documents
- Facilities, particularly Classroom, Computer, and Laboratory Setup
- Faculty/Personnel Information
- Field Placement
- Institutional Research
- Internships/Cooperative Education
- Learning Center Use
- Placement Data
- Prerequisite Information
- Registration
- Scholarship/Grants
- Service Learning
- Special Studies and Reports
- Student Information System
- Surveys

Academic Advising

- Academic Records/Grades
- Academic Support Office Use By Students and Other Groups
- Admissions
- Assessment Data
- Athletics
- Course Information
- Disability Information
- Documents
- Field Placement
- Institutional Research
- Internships/Cooperative Education
- Learning Center Use
- Placement Data
- Prerequisite Information
- Registration
- Scholarship/Grants
- Service Learning
- Special Studies and Reports
- Student Information System
- Student Life Data
- Surveys

Academic Counseling

- Academic Records/Grades
- Academic Support Office Use and Data
- Admissions
- Assessment Data
- Athletics
- Course Information
- Disability Information
- Documents
- Field Placement
- Housing
- Institutional Research
- Internships/Cooperative Education
- Learning Center Use
- Placement Data
- Prerequisite Information
- Registration
- Scholarship/Grants
- Service Learning
- Special Studies and Reports
- Student Information System
- Student Life Data
- Surveys

Academic Dean's Offices

- Academic Records/Grades
- Academic Support Office Use and Data
- Admissions
- Assessment Data
- Athletics
- Course Information
- Course Syllabi and Textbook Use
- Disability Information
- Documents
- Facilities, Classroom, Computer, and Laboratory Setup
- Faculty/Personnel Information
- Field Placement
- Institutional Research
- Internships/Cooperative Education
- Learning Center Use
- Placement Data
- Prerequisite Information
- Registration
- Scholarship/Grants
- Service Learning
- Special Studies and Reports
- Student Information System
- Surveys

Academic Affairs

- Academic Records/Grades
- Academic Support Office Use and Data
- Admissions
- Assessment Data
- Athletics
- Course Information
- Course Syllabi and Textbook Use
- Disability Information
- Documents
- Facilities, Classroom, Computer, and Laboratory Setup
- Faculty/Personnel Information
- Field Placement
- Institutional Research
- Internships/Cooperative Education
- Learning Center Use
- Placement Data
- Prerequisite Information
- Registration
- Scholarship/Grants
- Service Learning
- Special Studies and Reports
- Student Information System
- Surveys

Institutional Research

- Academic Records/Grades
- Academic Support Office Use and Data
- Admissions
- Assessment Data
- Athletics
- Course Information
- Disability Information
- Documents
- Facilities, Classroom, Computer, and Laboratory Setup
- Faculty/Personnel Information
- Field Placement
- Institutional Research
- Internships/Cooperative Education
- Learning Center Use
- Placement Data
- Prerequisite Information
- Registration
- Scholarship/Grants
- Service Learning
- Special Studies and Reports
- Student Information System
- Student Life Data
- Surveys

FIGURE 5
Conceptual Model of Student Flow Process

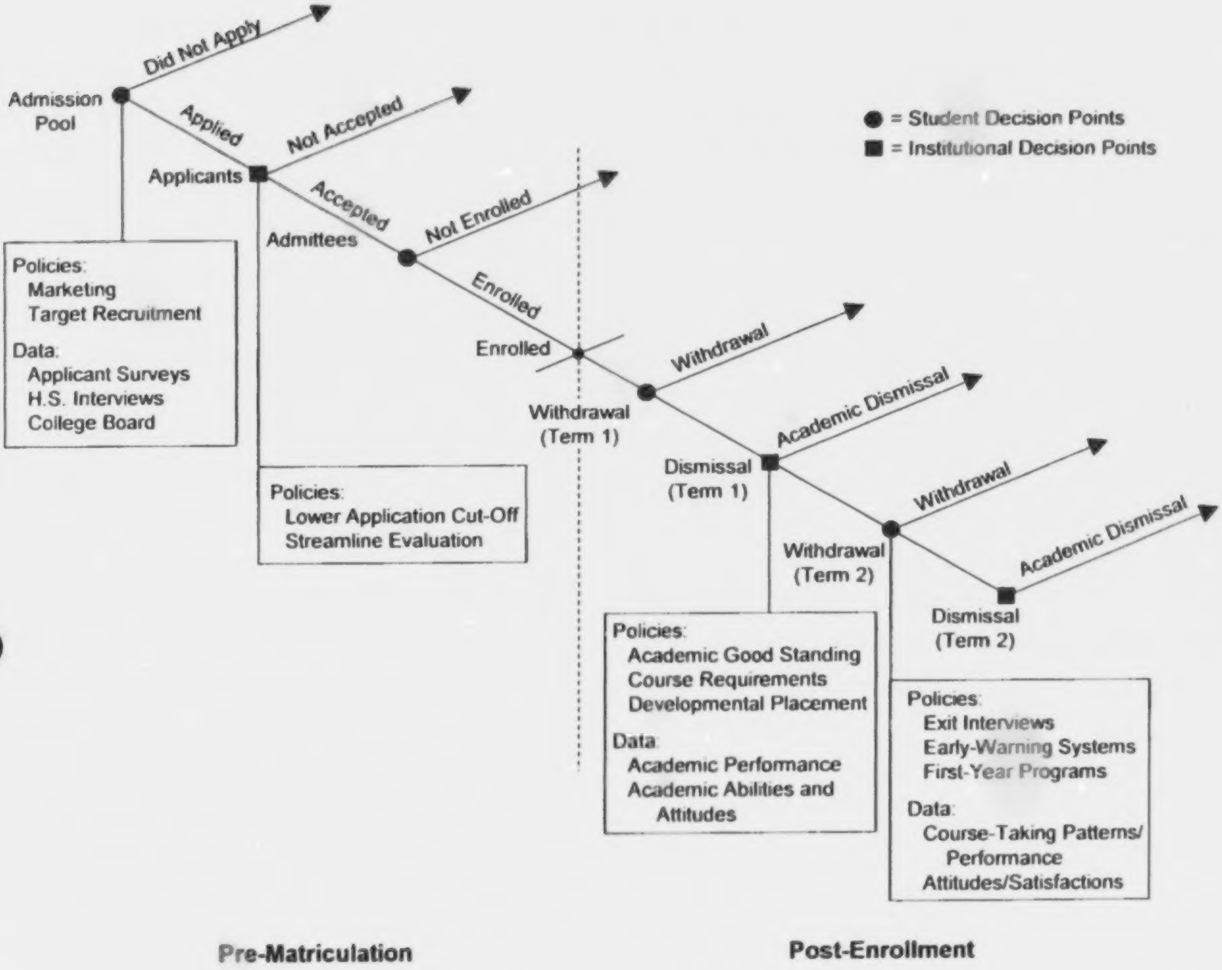
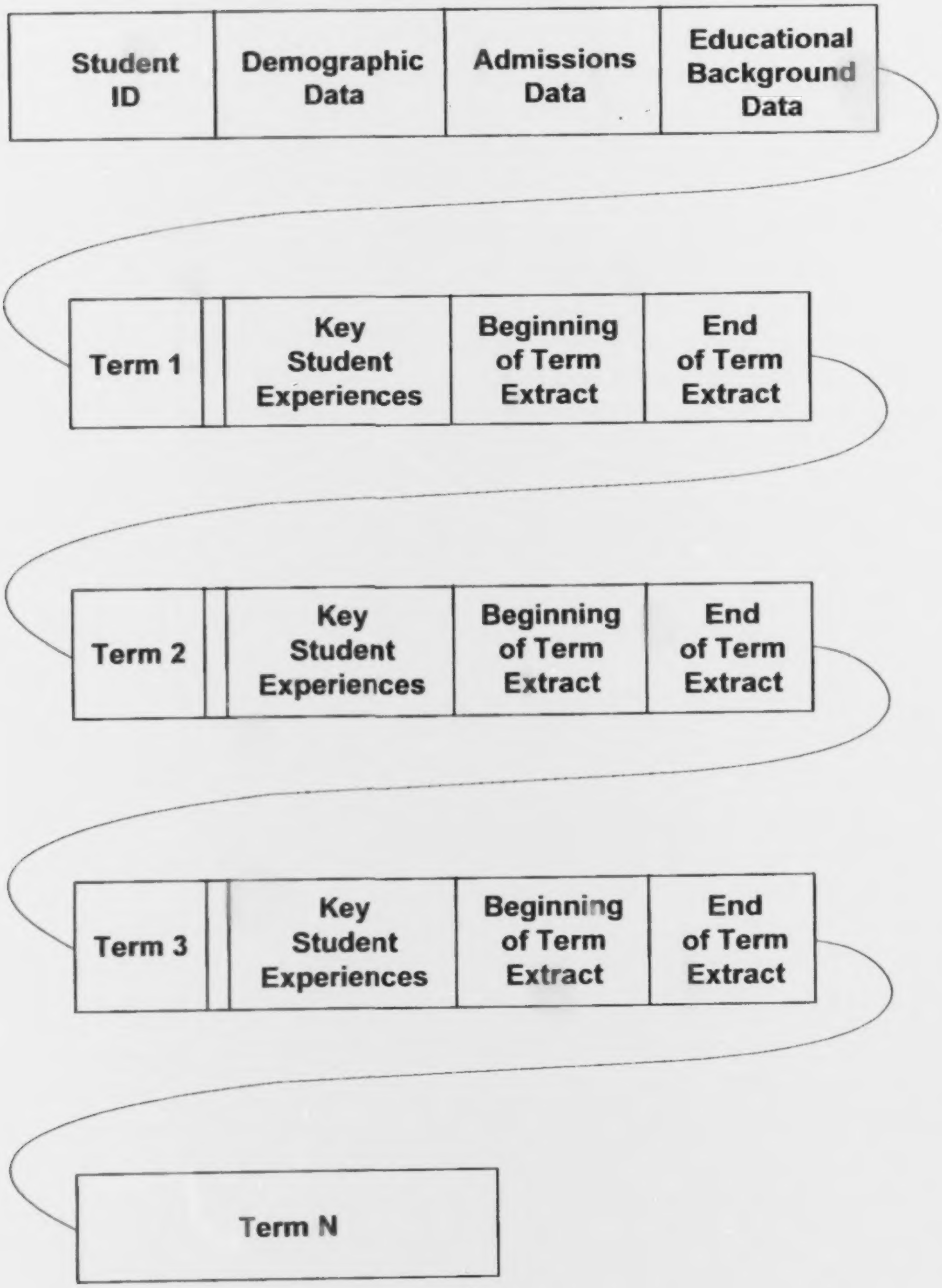

Admission Pool
Did Not Apply
Applied
Applicants
Not Accepted
Accepted
Admittees
Not Enrolled
Enrolled
Enrolled
Withdrawal
Withdrawal (Term 1)
Academic Dismissal
Dismissal (Term 1)
Withdrawal
Withdrawal (Term 2)
Academic Dismissal
Dismissal (Term 2)
● = Student Decision Points
■ = Institutional Decision Points
Policies: Marketing, Target Recruitment
Data: Applicant Surveys, H.S. Interviews, College Board
Policies: Lower Application Cut-Off, Streamline Evaluation
Policies: Academic Good Standing, Course Requirements, Developmental Placement
Data: Academic Performance, Academic Abilities and Attitudes
Policies: Exit Interviews, Early-Warning Systems, First-Year Programs
Data: Course-Taking Patterns/Performance, Attitudes/Satisfactions
Pre-Matriculation
Post-Enrollment

FIGURE 6
Example: Small Rural Community College
Breakdown of Fall Enrollment by Types of Students

Location		Program		Time		Status		Gender	
On Campus	76.7% ➤	Transfer	36.1% ➤	Day	30.7% ➤	FT	25.7% ➤	M	12.8%
								F	12.8%
						PT	5.0% ➤	M	1.9%
								F	1.2%
				Eve	5.4% ➤	FT	0.4% ➤	M	0.2%
								F	1.2%
						PT	5.0% ➤	M	2.5%
								F	2.4%
		Vocational	39.7% ➤	Day	36.5% ➤	FT	28.5% ➤	M	15.5%
								F	13.1%
						PT	8.0% ➤	M	2.3%
								F	5.7%
				Eve	3.2% ➤	FT	0.2% ➤	M	0.2%
								F	0.0%
						PT	2.9% ➤	M	2.0%
								F	0.9%
		Developmental	0.9%						
Off Campus	23.3% ➤	Transfer	8.8% ➤	Day	4.7% ➤	FT	2.1% ➤	M	0.5%
								F	1.5%
						PT	2.6% ➤	M	0.8%
								F	1.8%
				Eve	4.1% ➤	FT	0.5% ➤	M	0.4%
								F	0.2%
						PT	0.5% ➤	M	0.4%
								F	2.5%
		Vocational	13.8% ➤	Day	12.4% ➤	FT	7.8% ➤	M	0.4%
								F	7.4%
						PT	4.6% ➤	M	0.9%
								F	3.7%
				Eve	1.4% ➤	FT	0.1% ➤	M	0.0%
								F	0.1%
						PT	1.3% ➤	M	0.5%
								F	0.7%
		Developmental	0.7%						

1 = Full-Time, Day, Transfer (27.1%)
2 = Full-Time, Day, Occupational (28.6%)
3 = Part-Time, Day, Program (20.2%)
4 = Part-Time, Evening, Program (12.5%)
5 = Off-Campus, Full-Time, Day, Occupational (7.8%)

FIGURE 7
General Layout of a Longitudinal Student Database File


Student ID
Demographic Data
Admissions Data
Educational Background Data
Term 1
Key Student Experiences
Beginning of Term Extract
End of Term Extract
Term 2
Key Student Experiences
Beginning of Term Extract
End of Term Extract
Term 3
Key Student Experiences
Beginning of Term Extract
End of Term Extract
Term N

APPENDIX A
An Example of Common Core Files with Data Elements

Data files that constitute a recommended common core of data for a data file to examine the first year of college include:

Common Core Student Data Elements—Demographic
Common Core Student Data Elements—Educational Background
Common Core Student Data Elements—Enrollment Status
Common Core Course/Section Data Elements
Common Core Enrollment Data Elements [Course/Person]
Common Core Admissions Data Elements
Common Core Personnel Data Elements—Instructional/Non-Instructional Staff
Common Core Finance Data Elements
Common Core Physical Facilities Data Elements

Individual data elements under the headings are listed on the following pages. Elements that may be useful but that are of secondary importance for most analyses are enclosed in square brackets. Recommended data elements for the common core are drawn from many places throughout the institution. The most common sources are listed under "Source" using the following acronyms:

SIS = Student Information Management System (Registrar's System)
PPS = Payroll/Personnel System
FIN = Financial System
FINAID = Financial Aid System
PHY = Physical Facilities System

Type of data can be either:

A=alpha
N=numeral

Common Core Student Data Elements—Demographic

Element	Source	Length	Type	Comments
Student ID Number, Current	SIS	9	A	Key Link
Student ID Number, Original	SIS	9	A	
[Last Name]	SIS	19	A	
[First Name]	SIS	14	A	
[Middle Name]	SIS	14	A	
Date of Birth	SIS	8	N	
Age	[calculated]	2	N	
Race	SIS	2	N	
Ethnicity	SIS	2	N	
Sex	SIS	1	A	
[Student Telephone Number]	SIS	10	A	
[Mailing Address: Street]	SIS	40	A	[mailing labels]
[Mailing Address: Second Line]	SIS	40	A	[mailing labels]
[Mailing Address: City]	SIS	20	A	[mailing labels]
[Mailing Address: State]	SIS	2	A	[mailing labels]
[Mailing Address: Zip Code + 4]	SIS	9	N	[mailing labels]
Billing Code	SIS	3	N	
County of Origin	[calculated]	2	N	
State of Origin	[calculated]	2	N	
Veteran Benefits Recipient	SIS	2	N	
Disabled Veteran	SIS	1	N	
Spouse/Child of Veteran	SIS	1	N	
Citizenship Status	SIS	2	N	
[Place of Birth – Student]	SIS	1	N	
[Place of Birth – Mother]	SIS	1	N	
[Place of Birth – Father]	SIS	1	N	

Common Core Student Data Elements—Demographic

Element	Source	Length	Type	Comments
Country of Birth	SIS	3	N	
Country of Citizenship	SIS	3	N	
Language Other Than English At Home	SIS	1	N	
[Language Most Comfortable With]	SIS	1	N	
Visa Type	SIS	2	A	
[Visa Issue Date]	SIS	5	N	
[Naturalization Date]	SIS	5	N	
Parent's Occupations	?			
Parent's Employment	?			
Impairment Flag	SIS	1	N	
[Wheelchair Bound Flag]	SIS	1	N	
[Blind or Legally Blind Flag]	SIS	1	N	
[Use Braces and Crutches Flag]	SIS	1	N	
[Deaf Flag]	SIS	1	N	
[Neurological Impairments Flag]	SIS	1	N	
[Speech Impairment Flag]	SIS	1	N	
[Cardiac Condition Flag]	SIS	1	N	
[Seizures Flag]	SIS	1	N	
[Learning Disability Flag]	SIS	1	N	
[Other Impairment Flag]	SIS	1	N	

Common Core Student Data Elements—Educational Background

Element	Source	Length	Type	Comments
ETS Code of High School (or equivalent)	SIS	4	N	
Date of High School Graduation	SIS	6	N	
College Admissions Average	SIS	3	N	
Reading Assessment Test Scores				
RAT Type of Exemption	SIS	1	A	
RAT Date of Exemption	SIS	8	N	
RAT Earliest Test/Retest Indicator	SIS	1	N	
RAT Earliest Pass/Fail Indicator	SIS	1	N	
RAT Earliest Test Date	SIS	8	N	
RAT Earliest Test Form	SIS	2	A	
RAT Earliest Subscore 1	SIS	2	N	
RAT Earliest Subscore 2	SIS	2	N	
RAT Earliest Subscore 3	SIS	2	N	
RAT Earliest Total Score	SIS	2	N	
RAT Earliest Scaled Score	SIS	2	N	
RAT Most Recent Test/Retest Indicator	SIS	1	N	
RAT Most Recent Pass/Fail Indicator	SIS	1	A	
RAT Most Recent Test Date	SIS	8	N	
RAT Most Recent Test Form	SIS	2	A	
RAT Most Recent Subscore 1	SIS	2	N	
RAT Most Recent Subscore 2	SIS	2	N	
RAT Most Recent Subscore 3	SIS	2	N	
RAT Most Recent Total Score	SIS	2	N	
RAT Most Recent Scaled Score	SIS	2	N	

Common Core Student Data Elements—Educational Background

Element	Source	Length	Type	Comments
Mathematics Assessment Test Scores				
MAT Type of Exemption	SIS	1	A	
MAT Date of Exemption	SIS	8	N	
MAT Earliest Test/Retest Indicator	SIS	1	N	
MAT Earliest Pass/Fail Indicator	SIS	1	A	
MAT Earliest Test Date	SIS	8	N	
MAT Earliest Test Form	SIS	2	A	
MAT Earliest Subscore 1	SIS	2	N	
MAT Earliest Subscore 2	SIS	2	N	
MAT Earliest Subtotal of 1 & 2	SIS	2	N	
MAT Earliest Subscore 3	SIS	2	N	
MAT Earliest Subscore 4	SIS	2	N	
MAT Earliest Subscore 5	SIS	2	N	
MAT Earliest Subtotal of 3, 4, & 5	SIS	2	N	
MAT Earliest Total Score	SIS	2	N	
MAT Most Recent Test/Retest Indicator	SIS	1	N	
MAT Most Recent Pass/Fail Indicator	SIS	1	A	
MAT Most Recent Test Date	SIS	8	N	
MAT Most Recent Test Form	SIS	2	A	
MAT Most Recent Subscore 1	SIS	2	N	
MAT Most Recent Subscore 2	SIS	2	N	
MAT Most Recent Subtotal of 1 & 2	SIS	2	N	
MAT Most Recent Subscore 3	SIS	2	N	
MAT Most Recent Subscore 4	SIS	2	N	
MAT Most Recent Subscore 5	SIS	2	N	
MAT Most Recent Subtotal of 3, 4, & 5	SIS	2	N	

Common Core Student Data Elements—Educational Background

Element	Source	Length	Type	Comments
MAT Most Recent Total Score	SIS	2	N	
Writing Assessment Scores				
WAT Type of Exemption	SIS	1	A	
WAT Date of Exemption	SIS	8	N	
WAT Earliest Test/Retest Indicator	SIS	1	N	
WAT Earliest Pass/Fail Indicator	SIS	1	A	
WAT Earliest Test Date	SIS	8	N	
WAT Earliest Test Form	SIS	2	A	
WAT Earliest 1st Reader's Score	SIS	1	N	
WAT Earliest 2nd Reader's Score	SIS	1	N	
WAT Earliest 3rd Reader's Score	SIS	1	N	
WAT Earliest Total Score	SIS	2	N	
WAT Earliest 1st Reader's ESL	SIS	1	A	
WAT Earliest 2nd Reader's ESL	SIS	1	A	
WAT Earliest 3rd Reader's ESL	SIS	1	A	
WAT Earliest Final ESL Indicator	SIS	1	A	
WAT Most Recent Test/Retest Indicator	SIS	1	N	
WAT Most Recent Pass/Fail Indicator	SIS	1	A	
WAT Most Recent Test Date	SIS	8	N	
WAT Most Recent Test Form	SIS	2	A	
WAT Most Recent 1st Reader's Score	SIS	1	N	
WAT Most Recent 2nd Reader's Score	SIS	1	N	
WAT Most Recent 3rd Reader's Score	SIS	1	N	
WAT Most Recent Total Score	SIS	2	N	
WAT Most Recent 1st Reader's ESL	SIS	1	A	

Common Core Student Data Elements—Educational Background

Element	Source	Length	Type	Comments
WAT Most Recent 2nd Reader's ESL	SIS	1	A	
WAT Most Recent 3rd Reader's ESL	SIS	1	A	
WAT Most Recent Final ESL Indicator	SIS	1	A	
ESL Student Indicator	SIS	1	A	
TOEFL Required Indicator	SIS	1	A	
TOEFL Score	SIS	3	N	
SAT Verbal Score	SIS	3	N	
SAT Math Score	SIS	3	N	
SAT Total Score	SIS	4	N	
ACT English Score	SIS	2	N	
ACT Math Score	SIS	2	N	
ACT Reading Score	SIS	2	N	
ACT Sci Reasoning Score	SIS	2	N	
ACT Composite Score	SIS	2	N	
Advanced Placement Score	SIS		N	Repeat as necessary
Foreign Language Placement Score	SIS		N	Repeat as necessary
GED Total Score	SIS	3	N	Repeat as necessary
GED Writing Score	SIS	2	N	Repeat as necessary
GED Social Science Score	SIS	2	N	Repeat as necessary
GED Science Score	SIS	2	N	Repeat as necessary
GED English Score	SIS	2	N	Repeat as necessary
GED Math Score	SIS	2	N	Repeat as necessary
GED Type	SIS	1	A	Repeat as necessary

Common Core Student Data Elements—Educational Background

Element	Source	Length	Type	Comments
ETS Code of Last College	SIS	6	N	
Transfer Credits	SIS	2	N	
Transfer Grade-Point Average	SIS	3	A	
Transfer Date	SIS	8	A	

Common Core Student Data Elements—Enrollment Status

Element	Source	Length	Type	Comments
For All Students:				
Year First Enrolled	SIS	4	N	First activity
Term First Enrolled	SIS	2	N	First activity
Admit Term	SIS	5	A	Current admit term
Original Entering Status	SIS	1	N	New/transfer
College or School of Present Attendance	SIS	2	N	
Current Term	SIS	2	N	
Residency Status (Tuition/TAP)	SIS	1	N	
Current Academic Status	SIS	1	N	
Student Degree Status	SIS	1	A	
Full-time/Part-time Status	SIS	1	N	
Class Standing	SIS	1	N	
[High-Low Tuition Indicator]	SIS	1	A	
[Special Indicator]	SIS	1	A	
Type of Waiver I	SIS	2	N	
Type of Waiver II	SIS	2	N	
[Other Special Programs]	SIS	2	N	
Currently Serving in Armed Forces	SIS	1	N	
Financial Aid Source of Funds	FINAID	1	A	TBD by Financial Aid
Financial Aid Type of Funds	FINAID	1	A	TBD by Financial Aid
Financial Aid Level of Need	FINAID	1	A	TBD by Financial Aid
[Award Type]	FINAID	1	A	TBD by Financial Aid
[Award Amount]	FINAID	4	N	TBD by Financial Aid
Degree For Which Enrolled	SIS	2	N	X3, look in all three
Registered College Program Code	SIS	4	A	X3, look in all three
Registered Program Title	SIS	19	A	X3, look in all three

Common Core Student Data Elements—Enrollment Status

Element	Source	Length	Type	Comments
Minor For Which Enrolled	SIS	2	N	X3, look in all three
Registered College Program Code-Minor	SIS	4	A	X3, look in all three
Registered Program Title-Minor	SIS	19	A	X3, look in all three
IPEDS Code	SIS	6	N	Repeat 3 times
Cumulative GPA	SIS	3	N	
Cumulative Credits Earned - Local Credits	SIS	4	N	
Cum. Credits Earned - Transfer Credits	SIS	4	N	
Cum. Credits Earned - Other Credits	SIS	4	N	
Cum. Credits Earned - Total Credits	SIS	4	N	
Cumulative Credits Attempted	SIS	4	N	
Current Credits Attempted	SIS	2	N	
Current Credits Earned	SIS	2	N	
Current Hours Attempted	SIS	2	N	
Current Term GPA	SIS	3	N	
[Dean's List Indicator]	SIS	1	A	
[Advisor Number]	SIS	5	N	
Degree Objective	SIS	2	A	
Intended Persistence	?	?		Not Collected?
[Appeal Filed Date]	SIS	5	N	
[Appeal Total Credits]	SIS	3	N	
[Appeal Cumulative GPA]	SIS	3	N	
[Appeal Reason]	SIS	2	A	
[Appeal Granted Indicator]	SIS	1	A	

Common Core Student Data Elements—Enrollment Status

Element	Source	Length	Type	Comments
[Probation Start Term]	SIS	4	N	
[Probation Type]	SIS	1	A	
[Probation GPA Required]	SIS	3	N	
[Probation Date Cleared]	SIS	5	N	
[Student Academic Honors Flag]	SIS	1	N	
[Honors Special Curriculum Flag]	SIS	1	N	
[Block Program Flag]	SIS	1	N	
[High School Concurrent Flag]	SIS	1	N	
[Greek Membership Flag]	SIS	1	N	
[Other Flags as Needed]				
# Hours Worked/Week	?			
Resident/Commuter Status	[calculated]	1	N	
Day/Evening/Weekend	[calculated]	1	N	
Residence Hall	?			
Degree Type	SIS	3	A	Code as needed
Degree Field/Major	SIS	3	A	Code as needed
Degree Term	SIS	4	N	Code as needed
Degree Honors Designation	SIS	2	A	Code as needed
Degree GPA	SIS	3	N	Code as needed
[Departure Date]	?			
[Departure Reason]	?			

Common Core Course/Section Data Elements

Element	Source	Length	Type	Comments
Course Data:				
Course Department	SIS	5	A	Key link
Course Number	SIS	7	A	Key link
Course Description	SIS	25	A	
Enrollment Maximum	SIS	3	N	
Enrollment Minimum	SIS	3	N	
Maximum Credits	SIS	3	N	
Minimum Credits	SIS	3	N	
Course Variable Credit Indicator	SIS	1	N	
Prerequisite Courses	SIS	-	-	Repeat as needed
Co-Requisite Courses	SIS	-	-	Repeat as needed
Special Permission Flag	SIS	1	N	
Pass/Fail Flag	SIS	1	N	
Repeatable Flag	SIS	1	N	
Course First Term Offered	SIS	4	A	
Course Last Term Offered	SIS	4	A	
Grading Method	SIS	1	N	
Course Room Required	SIS	2	N	
Block Program Flag	SIS	1	N	
General Education Flag	SIS	1	N	
Liberal Arts Flag	SIS	1	N	
ESL Flag	SIS	1	N	
Total Contact Hours	SIS	3	N	
Type of Course/Section	SIS	1	A	
Course Division Indicator	SIS	1	A	
On campus Day/Evening Indicator	SIS	1	N	
Course Waiver	SIS	2	N	

Common Core Course/Section Data Elements

Element	Source	Length	Type	Comments
Course/Section Registration #	SIS	4	N	
Session Indicator	SIS	1	N	
Year in Which Current Term Begins	SIS	4	N	Key link
Current Term	SIS	2	N	Key link
Course Section Identifier	SIS	5	N	Key link
Division	SIS	1	A	
Discipline	SIS	5	N	
Department	SIS	2	N	
Academic Level	SIS	1	N	
Section Number	SIS	5	N	
Mode of Delivery	[calculated]		N	Parsed off another field
Minimum Enrollment	SIS	2	N	
Current Enrollment	SIS	2	N	
Primary Limit	SIS	2	N	
Secondary Limit	SIS	2	N	
# Reserved Seats	SIS	2	N	
Wait List Count	SIS	2	N	
Closed Attempt Counter	SIS	2	N	
Closed Flag	SIS	1	N	
Cancelled Flag	SIS	1	N	
Cancelled Reason	SIS	2	N	
Begin Date	SIS	5	N	
End Date	SIS	5	N	
[Instructor Last Name]	SIS	19	A	Repeat as needed
[Instructor First Name]	SIS	14	A	Repeat as needed
[Instructor Middle Name]	SIS	14	A	Repeat as needed
Instructor ID Number	SIS	6	N	Repeat as needed

Common Core Course/Section Data Elements

Element	Source	Length	Type	Comments
Instructor % Assignment	SIS	2	N	
Graded Flag	SIS	1	N	
Course GPA	SIS	3	N	
Course Section Room	SIS	5	N	
Course Section Building	SIS	2	N	
Section Meeting Days	SIS		A	
Section Start Time	SIS	4	N	
Section End Time	SIS	4	N	
# Failing Course	[calculated]			
# Withdrawing	[calculated]			
# Incomplete Grades	[calculated]			
# Repeating Course	[calculated]			
# Enrolled Same Dept.	[calculated]			
# Enrolled Same College/School	[calculated]			
Total Credits Enrolled For	[calculated]			Current value
Total Credits Generated	[calculated]			Current value
# Credits Enrolled Same Dept.	[calculated]			
# Credits Enrolled Same College/School	[calculated]			

Common Course Enrollment Data Elements [Course/Person]

Element	Source	Length	Type	Comments
Student ID Number	SIS	9	A	Key link
Course Section Identifier	SIS	5	N	Key link
Year in Which Term Began	SIS	4	N	Key link
Term Code	SIS	2	N	Key link
Credits Enrolled For	SIS	3	N	
Credits Earned	SIS	3	N	
Alternate Credit Flag	SIS	1	A	
Grade	SIS	1	A	
Supplemental Grade	[calculated]	1	A	As needed
Repeat Flag	SIS	1	A	Any repeat
Repeat Prior Term	SIS	1	A	As needed
Repeat Prior Grade	[calculated]	1	A	As needed
Grade Change Flag	SIS	1	A	Any change
Grade Change Date	SIS	8	N	As needed
Grade Change Reason	SIS	1	A	As needed
Old Grade	[calculated]	1	A	
Incomplete Flag	[calculated]	1	A	Was or is incomplete
Date Completed	[calculated]	1	A	
Withdrawal Flag	[calculated]	1	A	Any withdrawal
No Credit Flag	SIS	1	A	Not taken for credit
Course Cancelled Flag	SIS	1	A	

Common Core Admissions Data Elements

Element	Source	Length	Type	Comments
Student ID Number	SIS	9	A	Key link
[Full Name]	SIS	39	A	
[Last Name]	SIS	20	A	
[First Name]	SIS	14	A	
[Middle Initial]	SIS	1	A	
[Name Suffix]	SIS	3	A	
Date of Birth	SIS	6	N	
Race	SIS	1	A	
Ethnicity	SIS	1	A	
Sex	SIS	1	A	
[Contact Area Code]	SIS	3	N	
[Contact Telephone]	SIS	7	N	
[Mailing Address: Street]	SIS	32	A	[mailing labels]
[Mailing Address: Second Line]	SIS	18	A	[mailing labels]
[Mailing Address: City]	SIS	2	A	[mailing labels]
[Mailing Address: State]	SIS	9	A	[mailing labels]
[Mailing Address: Zip Code]	SIS	2	A	[mailing labels]
[Mailing Address: Country]	SIS	1	A	[mailing labels]
Citizenship	SIS	2	A	
Residency	SIS	1	N	
County of Origin	[calculated]	1	A	
State of Origin	SIS	1	A	
Country of Birth	SIS	3	N	
Native Language	SIS	3	N	
[Mother's Birth Country]	SIS	1	N	
[Father's Birth Country]	SIS	1	N	

Common Core Admissions Data Elements

Element	Source	Length	Type	Comments
Veteran Status	SIS	1	A	
Employment Status	SIS	4	N	
High School of Origin	SIS	5	N	Graduated or last h.s.
High School Leave Year	SIS	1	A	
High School GPA	SIS	2	N	
High School Class Standing	SIS	2	N	Code up to 3
High School Graduate Flag	SIS	1	A	Code up to 3
Prior College Name(s)	SIS	10	A	Code up to 3
Prior College GPA(s)	SIS	3	N	Code up to 3
Prior College Credits	SIS	3	N	Code up to 3
Prior College End Date(s)	SIS	5	N	
Prior College Degree(s)	SIS	2	A	
Highest Degree Attained	[calculated]	2	A	
Highest Degree Institution	[calculated]	10	A	
[English Subject Credits]	SIS	3	N	
[First Foreign Language Subject Credits]	SIS	3	N	
[Math Subject Credits]	SIS	3	N	
[Science Subject Credits]	SIS	3	N	
[Social Studies Subject Credits]	SIS	3	N	
[Second Foreign Language Subject Credits]	SIS	3	N	
[Fine Arts Subject Credits]	SIS	3	N	
Degree Objective	SIS	2	N	
Admission College Code	SIS	2	N	
Admission Curriculum Code	SIS	2	N	

Common Core Admissions Data Elements

Element	Source	Length	Type	Comments
Admit Status	SIS	1	A	
Admit Type	SIS	1	A	
Application Date	SIS	8	N	

Common Core Personnel Data Elements—Instructional/Non-Instructional Staff

Element	Source	Length	Type	Comments
All Employees:				
Employee SSN	PPS	9	A	Key link
Employee Name	PPS	44	A	
Employee Name Suffix	PPS	4	A	
[Home Address Line (1)]	PPS	30	A	
[Home Address Line (2)]	PPS	30	A	
[Home City]	PPS	13	A	
[Home State]	PPS	2	A	
[Home Zip Code]	PPS	9	N	
[Office Building Code]	PPS	5	A	
[Office Room Number]	PPS	5	A	
Phone Number	PPS	7	N	
Title/Position Code	PPS	5	N	Recode to match
Sex	PPS	1	A	
Marital Status	PPS	1	A	
Date of Birth	PPS	8	N	
Age	[calculated]	3	N	
Race	PPS	1	A	
Ethnicity	PPS	1	A	
Visa Status	PPS	2	A	
[Visa Issue Date]	PPS	6	N	
[Visa Expiration Date]	PPS	6	N	
Citizenship Country	PPS	3	A	
Citizenship Status	PPS	1	A	
Veteran Status	PPS	1	A	
Handicap Flag	PPS	1	A	

Common Core Personnel Data Elements—Instructional/Non-Instructional Staff

Element	Source	Length	Type	Comments
Appointment Department Code	PPS	4	N	Recode to match
Appointment Department Name	PPS	30	A	Recode to match
Appointment Status	PPS	1	A	Recode & Repeat as needed
Appointment Type	PPS	1	A	Recode & Repeat as needed
Appointment Begin Date	PPS	8	N	Recode & Repeat as needed
Appointment End Date	PPS	8	N	Recode & Repeat as needed
Appointment Pay Rate	PPS	8	N	Recode & Repeat as needed
Appointment % Full-time	PPS	5	N	Recode & Repeat as needed
Adjunct Flag	RF	1	A	Recode & Repeat as needed
[Date of Most Recent Position Change]	[calculated]			
[Original Hire Date]	PPS	8	N	Recode to match
[Job Code at Hire]	[calculated]			
[Separation Date]	PPS	8	N	Recode to match
[Separation Reason Code]	PPS	2	A	Recode to match
[Separation Reason Description]	PPS	50	A	Recode to match
Instructional Staff:				
Academic Rank	?	?	?	Recode to match
Starting Rank	[calculated]			Recode to match
Date Most Recent Promotion	[calculated]	8	N	Recode to match
Tenure Status	PPS	1	A	Recode to match
Tenure Department	PPS	4	N	Recode to match
Date of Tenure	PPS	8	N	Recode to match
Highest Degree Acronym	PPS	10	A	Recode to match
Highest Degree Year	PPS	4	N	Recode to match
Highest Degree Major	PPS	4	N	

Common Core Personnel Data Elements—Instructional/Non-Instructional Staff

Element	Source	Length	Type	Comments
Highest Degree Minor	PPS	4	N	
Highest Degree Institution Name	PPS	40	A	
Base Compensation	?	?	?	Recode to match
Additional Compensation	?	?	?	
Previous Institution	?	?	?	
Last Position at Prev. Inst.	PPS	20	A	
[Publications]	?	?	?	Recode to match
[Other Accomplishments]	?	?	?	Recode to match
Teaching Hours	PPS	3	N	Recode to match
Sponsored Research Hours	PPS	3	N	Recode to match
Unsponsored Research Hours	PPS	3	N	Recode to match
College Administration Hours	PPS	3	N	Recode to match
Departmental Administration Hours	PPS	3	N	
Counseling/Advising Hours	PPS	3	N	
Other Hours	PPS	3	N	

Common Core Finance Data Elements

Element	Source	Length	Type	Comments
Account Year	FIN	4	A	Recode to match
Account Number	FIN	?	A	Recode to match
School or Department Code	FIN	4	N	Recode to match
Dean/Director/Chair	FIN	?	N	Recode to match
Function	FIN	?	A	Recode to match
Object Code	FIN	?	A	Recode to match
Budget Line #	FIN	5	A	Recode to match
Restricted/Unrestricted Flag	[calculated]	1	A	Recode to match
Budgeted Amount	FIN	6	N	Recode to match
Current Amount Expended	FIN	6	N	Recode to match
Percent Expended	[calculated]	2	N	Recode to match
Amount Encumbered	[calculated]	6	N	Recode to match
Percent Encumbered	[calculated]	2	N	Recode to match

Common Core Physical Facilities Data Elements

Element	Source	Length	Type	Comments
For Buildings:				
Building ID #	PHY			
Gross Square Footage	PHY			
Replacement Value	PHY			
Year of Construction	PHY			
Expenditure on Renovation and Renewal	PHY			Repeat as needed
Year of Expenditure	PHY			Repeat as needed
For Rooms:				
Room ID #	PHY	4	A	
Building ID #	PHY			
Use Code	PHY			
Net Square Footage	PHY			
# Stations	PHY			
Assignments	PHY			
Special Equipment Codes	PHY			

APPENDIX B
Report Forms and Definitions

Reports produced by a longitudinal tracking system are intended to provide timely and accessible information to decisionmakers at the institution. Standard summary reports are provided to document overall patterns of student persistence, performance, and behavior. All standard reports are constructed for a given tracking cohort and can be run to ascertain the status and performance of members of that cohort as of any designated subsequent term in the tracking period. All reports can be run for the cohort as a whole or for any subset of the cohort as defined by an available tracking system data element. For example, the entire report package could be run only for students in a certain ethnic category or program of study. The system should also be designed so that an investigator can probe the dataset at any time using additional statistical procedures through locally available statistical packages (SPSS, SAS, or Access).

Standard reports are of several different types, described as follows:

- Progression and Status, or Overall Student Flow Reports document or summarize the number of students and the percentage of a given cohort still enrolled as of a given subsequent term, the number completing degree programs, and other longitudinal progression information.
- Overall Academic Performance Reports document the achievements to date of members of the cohort in terms of hours attempted and completed, grade point averages, course completion rates, average loads, and similar indicators.
- Coursework Status Reports including Patterns of Experience document the performance and progress of students in particular, identified courses in core skill areas.
- Coursework Placement/Effectiveness Reports document the effectiveness of basic skills placement policies by examining student performance in later coursework for students initially placed at various skill levels and completing various later courses.

Report formats and associated descriptions and definitions for each standard report are provided below:

TERM-TO-TERM PROGRESSION REPORT

This report provides summary term-to-term information on student progress. It presents both the absolute number of students and the percentage of the beginning cohort persisting and completing for each elapsed term in the tracking period. Separate versions of the report can be produced for a) first-time college students, and b) new transfer students. Column headers consist of a longitudinal series of terms for which these summary performance indicators can be calculated. Row variables consist of a standard set of demographic and educational background groupings. A "Program-Level" version of this report can also be run with row variables corresponding to initial program codes, grouped by catalog length of program (e.g., One-Year Certificate, Two-Year AAS, and Transfer Programs).

All percentages in this report are calculated on the basis of their associated row totals. Note that all completion percentages in this report are cumulative; that is, any entry includes all those students who had completed a degree by the end of the indicated term and all previous terms included in the tracking period.

Variables used in this report (page 105) can be found in tables in Appendix A and are further defined as follows.

Column Variables:

NUMBER OF STUDENTS: The total number of students in the cohort who are members of the demographic groups described by the row labels. These also correspond to Term 1 enrollments.

TERM 2/TERM N: Includes (1) the number of students in the cohort who are actively enrolled in the institution during each elapsed term as indicated by the Total Credit Hours Attempted data element, and (2) the cumulative number who have completed a degree or certificate as of the term indicated by the first Type of Degree or Certificate Awarded data element. "Term 4" thus includes an entry for all students actively enrolled as of the fourth term after the cohort's first term of academic history, and an entry for those who had completed degrees or certificates up to and including the fourth term. This report is produced in a "count" version giving absolute numbers and a "percentage" version giving the proportion of cohort starters in each group persisting and completing. Only the first four terms of the total term tracking period are illustrated in the example.

Row Variables:

GENDER: Male and Female categories as indicated by the Gender data element.

AGE: Age categories as indicated. Age is calculated from the YY digits of the Date of Birth data element and calculated from the beginning of the tracking period.

RACE AND ETHNICITY: Race and Ethnic categories as indicated; recoded from the Race and Ethnic data elements.

CITIZENSHIP: Categories as indicated by the Citizenship data element

RESIDENCE AT ENTRY: Categories of in-district and out-of-district.

PHYSICALLY DISABLED: Row includes only those students indicating a handicap as contained in one or more Impairment flags.

DISADVANTAGE: Row contains only those students with disadvantaged status as defined and calculated by institution.

LIMITED ENGLISH: Row contains only those students indicating limited English-speaking ability as defined and calculated by institution.

HIGHEST DEGREE ATTAINED: Categories as shown in the table (page 106); recoded from the Highest Degree Previously Attained data element.

ENTERING STATUS: Categories as shown in the table (page 106); assigned and recoded on the basis of an entry in one or more of the Prior College data elements.

DAY/EVENING INDICATOR: Categories as calculated based on institutional definitions for the first term of the tracking period.

HIGH SCHOOL CONCURRENT FLAG: Row includes only those students that began their study at the college as concurrent enrollment students as shown in the High School Concurrent Flag data element.

DATE OF HIGH SCHOOL GRADUATION: Categories as indicated calculated on the basis of the beginning of the tracking period.

INITIAL LOCATION OF ATTENDANCE: Categories as derived from Course Section location data elements for the first term of the tracking period.

INITIAL PROGRAM: Categories as shown; recoded from the Registered College Program data element for the first term of the tracking period.

INITIAL OBJECTIVE: Categories as contained in the Degree Objective data element for the first term of the tracking period.

INTENDED PERSISTENCE: Categories as contained in the Intended Persistence data element for the first term of the tracking period.

INITIAL READING PROFICIENCY: Categories as indicated in Educational Background database data elements for the first term of the tracking period.

INITIAL WRITING PROFICIENCY: Categories as indicated in Educational Background database data elements for the first term of the tracking period.

INITIAL MATH PROFICIENCY: Categories as indicated in Educational Background database data elements for the first term of the tracking period.

PROGRAM-LEVEL STATISTICS: Categories as shown, grouped into categories corresponding to the catalog length of the program; these are initial program declarations as indicated by the Registered College Program data element for the first term of the tracking period.

SUMMARY PROGRESS REPORTS

These reports document in greater detail the extent to which particular student populations persist and complete degrees. They are "snapshot" reports, reflecting the status of a given cohort as of a given term in the tracking period, and can be run for any term. Their format presents a number of persistence-related indicators as column variables and a range of subpopulation descriptors as row variables. Each column is intended to provide a somewhat different indicator of cohort status and is defined independently; note that the categories represented are not necessarily mutually exclusive and consequently will sum to more than 100% of the cohort. The report is produced in two forms: the "count" version shows the absolute number of students in each category, and the "percentage" version shows the corresponding percentage of each row total. In parallel with the Term-to-Term Progression Report, a Program-Level version of the report is also produced.

Column and row variables for these reports are defined below.

Column Variables:

NUMBER OF STUDENTS: The number of students in the cohort who are members of the subpopulations described by the row variables. For the percentage report, this number is repeated to serve as an indicator of cell size in terms of which to judge the significance of supplied percentages.

ENROLLED: The number of students in the cohort who are officially enrolled during the term for which the report is run. A student is counted as "enrolled" if a greater-than-zero entry is present for the Cumulative Credits Attempted data element for the term for which the report is run.

NOT ENROLLED: The number of students who are not enrolled by the above definition for the term for which the report is run.

SUSPENDED/DISMISSED: The number of students who are noted as academically dismissed or continuing dismissed in the Current Academic Status data element for any term up to and including the term for which the report is run.

NOT PERSISTING: The number of students who have not officially enrolled according to the above definition for two consecutive prior terms (excluding summer terms) and have not graduated. Note that the classification of a student as "not persisting" in this report is provisional and may change on the basis of subsequent behavior in later terms.

FIRST TERM ONLY: The number of students who officially enrolled in their first term (the cohort's first term of academic history), but who have not enrolled according to the above definition, and who have not graduated, in any subsequent term up to and including the term for which the report is run. Note that if the report is generated for the first term of the cohort, these entries should correspond to the "Number of Students" column.

COMPLETERS: The number of students who have earned a degree or certificate as indicated by any one of the Type of Degree/Certificate Awarded data elements for any term up to and including the term for which the report is run. Note that the same student may be present in both this category and in the "Enrolled" category if the student has re-enrolled after completing a degree or certificate.

RE-ENROLLED AFTER COMPLETION: The number of students who have earned a degree or certificate as defined in the "Completers" column and are also currently enrolled according to the above definitions.

Row Variables:

The row variables, definitions, and labels used in this report are identical to those used in the Term-to-Term Progression Report.

SUMMARY PERFORMANCE REPORT

This report presents summary statistics that describe the enrollment behavior of particular student subpopulations as they progress. The layout of the report is similar to that of the Summary Progress Report described previously. Like that report, it is a "snapshot" reflecting the status of the cohort as of a particular designated term in the tracking period. Performance indicators are arrayed as column headers and subpopulation breakdowns are incorporated as row variables. A "Program-Level" version of the report can also be created. Variables included in this report are defined as follows.

Column Variables:

NUMBER OF STUDENTS: The number of students in the cohort who are members of the demographic groups described by the row labels. These totals are the same as used in previous reports.

TOTAL CREDITS ATTEMPTED: The total number of student credit hours attempted up to and including the term for which the report is run. Based on the total of the Cumulative Credits Attempted data elements across all past terms. The statistic presented is a group average for each designated population.

CREDITS EARNED: The total number of credits earned up to and including the term for which the report is run. Based on the total of the Cumulative Credits Earned data elements across all past terms. As above, this statistic is presented as a group average for the designated population.

AVERAGE LOAD (EXCLUDING SUMMER): The average number of student credit hours attempted as defined above for each term in which the student was officially enrolled, up to and including the term for which the report is run, but excluding any summer terms. Each student's average load is first calculated across all terms (excluding summers) in which the student was enrolled; this statistic is then averaged across all members of the designated population.

CREDITS EARNED RATIO: The total number of student credit hours successfully completed by each student up to and including the term for which the report is run, divided by the total number of student credit hours attempted over the same period, both as defined previously. The ratio is 1.00 for a student who has successfully completed all courses. The completion ratio is calculated first for each student based on actual enrollments and completions. Then an average is prepared for each designated subpopulation.

CUMULATIVE GPA: The cumulative official overall grade point average as of the term for which the report was run, as indicated by the Cumulative Grade Point Average data element. The statistic presented is a group average for the designated population.

PERCENT EARNING DEGREE/CERTIFICATE: The percentage of students in each designated subpopulation who have successfully completed a degree or certificate as indicated by any entry in one of the four Type of Degree/Certificate Awarded data elements, for all terms up to and including the term for which the report is run. This entry is identical to the "Completed" column in the Summary Progress Report.

NUMBER OF ENROLLED TERMS TO COMPLETE: The number of terms in which students who completed a degree or certificate were officially enrolled up to and including the term in which a degree or certificate was awarded. The statistic presented is a group average for the designated subpopulation and includes only those who have completed a degree or certificate.

NUMBER OF ELAPSED TERMS TO COMPLETE: The number of terms elapsed since the beginning of the tracking period up to and including the term in which a degree or certificate was awarded. The statistic presented is a group average as above, and includes only those who have completed a degree or certificate.

Row Variables:

The row variables, definitions, and labels employed in this report are identical to those used in the previous two reports.

COURSEWORK STATUS REPORTS

The purpose of these reports is to track the performance of students of various kinds with respect to enrollment and performance in a range of developmental and common core sequence courses (English and Math). In the examples included here, the English/Speech Coursework Status Report tracks progress in English 001, English 002, English 003, and Speech 101. The Reading Coursework Status Report tracks progress in Reading 001, Reading 002, and Reading 003. The Initial Math Coursework Status Report tracks progress in Math 001, Math 002, and Math 003. The Later Math Coursework Status Report tracks progress in Math 005, Math 006, Math 007, and Math 008. The Business Coursework Status Report tracks progress in Business 100, Business 101, Accounting 101, and Secretarial Science 101. The Social Sciences Coursework Status Report tracks progress in Psychology 100 and Sociology 100. The Sciences Coursework Status Report tracks progress in Biology 100, Chemistry 100, and Chemistry 101. Like the Summary Progress and Summary Performance Reports described previously, these are "snapshot" reports, reflecting the status of the cohort with respect to these courses as of any designated term in the tracking period. Run successively for each term, they can be used to track the sequence and timing of taking these courses for different student populations.

Formats for all seven reports are similar and their column and row variables are defined below.

Column Variables:

NUMBER OF STUDENTS: The number of students in the cohort who are members of the demographic groups described by the row labels. These totals are the same as used in previous reports. Course-related column variables for all five reports are driven by "course specific" term data elements associated with each course. For each course, the following statistics are provided:

PERCENT ENROLLING: The cumulative percentage of the starting cohort (or of each designated subpopulation) attempting the course in any term up to and including the term for which the report is run. A student is counted as "attempting" the course if any grade designation appears in the appropriate "Course Performance" data element in the current term or in any previous term in the tracking period.

PERCENT RETAKING: The cumulative percentage of the starting cohort (or of each designated subpopulation) who enrolled for the course more than once up to and including the term for which the report is run. A student is counted in this category if more than one grade entry is detected in the appropriate "Course Performance" data elements in the current term or in any previous term in the tracking period.

PERCENT COMPLETING: The cumulative percentage of the starting cohort (or of each designated subpopulation) who received credit for the course in any term up to and including the term for which the report is run. A student is counted as having 'completed" the course if a passing grade is recorded in the appropriate "Course Performance" data element in the current term or in any previous term in the tracking period.

AVERAGE GRADE: The average grade earned by members of the cohort (or by each designated subpopulation) who enrolled for the course. Grades are averaged on a 0.0 to 4.0 scale for each designated population.

Row Variables:

Row variables for this report are identical to those used in the Summary Progress and Performance Reports.

COURSEWORK PLACEMENT/EFFECTIVENESS REPORTS

The purpose of these reports is to help evaluate the effectiveness of initial placements in Reading, Writing, and Math in the light of performance in subsequent coursework. Like the previous reports, these are "snapshot" reports, and can be produced to reflect the status of the cohort as of any term in the tracking period. Column variables consist of course-specific performance statistics similar to those used in the Coursework Status Reports described above, together with some additional statistics. Row variables consist of initial placement levels in Reading, Writing, and Math.

Column Variables:

NUMBER OF STUDENTS: The number of students in the cohort who are members of the demographic groups described by the row labels. These totals are the same as used in previous reports.

PERCENT NOW PROFICIENT IN READING, WRITING, OR MATH: The number of students who are designated as proficient at the indicated course level in reading, writing, or math as appropriate, and as determined by data elements in the Educational Background file for the term in which the report is run.

"COURSE PERFORMANCE" STATISTICS: These are identical to the columns previously defined for the various Coursework Status Reports (College-Level) described previously, except that only the "Percent Enrolling" and "Average Grade" statistics are presented for each course.

Row Variables:

Row variables consist of placement levels on entry as indicated by the Initial Reading Placement Level, Initial Writing Placement Level, or Initial Math Placement Level data elements.

HIGH SCHOOL FEEDBACK REPORT

The purpose of this report is to provide a set of summary performance statistics broken down by individual feeder high schools, to help inform articulation and recruitment arrangements with these schools. Column variables consist of statistics similar to those contained in the Cohort Status and Cohort Performance Reports described above, plus some additional performance statistics. Row variables consist of students from each identified high school, broken down further on the basis of the number of years elapsed since high school graduation.

Column Variables:

The first four columns, "Number of Students, Percent Enrolled, Percent Completed, and Percent First Term Only" contain statistics identical to those of the same name presented in the Summary Progress Report. Similarly, the last two columns contain statistics identical to the "Cumulative GPA" and "Total Credits Earned Ratio" columns of the Summary Performance Report. Additional columns are defined as follows:

ENGLISH AND MATH PLACEMENT LEVELS: For the example here, assignments to "College" and "Below College" are made on the basis of the Writing and Math Initial Placement Level data elements as follows. For "English," codes 1 and 2 of the Initial Writing Placement Level data element are assigned to "Below College"; for Math, code 1 of the Initial Math Placement Level data element is assigned to "Below College."

Row Variables:

Row variables consist of students from each identified high school, broken down further on the basis of the number of years elapsed since high school graduation as indicated by the Date of High School Graduation data element.

Term to Term Progression Report (Counts and Percentages)

	Number of Students	Term 2		Term 3		Term 4	
		Enrolled	Completing	Enrolled	Completing	Enrolled	Completing
Total							
Gender:							
Male							
Female							
Age:							
Under 18							
18-24							
25-34							
35-44							
45-54							
55 and over							
Ethnicity:							
Asian/Pacific Islander							
American Indian/Alaskan							
Black Non-Hispanic							
Hispanic							
White Non-Hispanic							
Non-Resident Alien							
Citizenship:							
U.S. Citizen							
Immigrant							
Non-Resident Alien							
District Residency:							
In-District							
All Out-of-District							
Physically Disabled:							
Disadvantaged:							
Limited English:							

Term to Term Progression Report (Counts and Percentages)

	Number of Students	Term 2		Term 3		Term 4	
		Enrolled	Completing	Enrolled	Completing	Enrolled	Completing
Highest Degree Attained:							
No College Degree							
Associate/Certificate							
Bachelors Degree							
Graduate Degree							
Entering Status:							
New/First-Time Student							
Transfer Student							
Day/Evening Indicator:							
Day							
Evening							
Weekend							
High School Concurrent Flag							
Date of High School Graduation:							
1 Year or Less Ago							
2-5 Years Ago							
More than 5 Years Ago							
Initial Location of Attendance:							
Location A Only							
Location B Only							
Location C Only							
All Other							
Initial Program:							
Transfer							
Occupational							
Other							

Term to Term Progression Report (Counts and Percentages)

	Number of Students	Term 2		Term 3		Term 4	
		Enrolled	Completing	Enrolled	Completing	Enrolled	Completing
Initial Objective:							
Prepare for New Occupation							
Improve Occupation Skills							
Decide on Career							
Prepare to Transfer							
Remedy Basic Skills							
Personal Interests							
Prepare for GED							
Other/Unknown							
Intended Persistence:							
One or Several Courses							
Certificate (Less than 1 Year)							
Certificate (1 Year or More)							
Associate Degree							
Initial Reading Proficiency:							
Reading 085 or below							
Reading 090							
Reading 091							
Reading 110							
Above Reading 110							
Initial Writing Proficiency Level:							
English 097 or below							
English 098							
English 101							
English 102 or above							
Initial Math Proficiency Level:							
Below Level 1							
Level 1							
Level 2							
Level 3							

Summary Progress Report (Counts and Percentages) for XX Cohort as of XX Term

	Number of Students	Enrolled	Not Enrolled	Suspended/ Dismissed	Not Persisting	First Term Only	Completed	Re-Enrolled
Total								
Gender:								
Male								
Female								
Age:								
Under 18								
18-24								
25-34								
35-44								
45-54								
55 and over								
Ethnicity:								
Asian/Pacific Islander								
American Indian/Alaskan								
Black Non-Hispanic								
Hispanic								
White Non-Hispanic								
Non-Resident Alien								
Citizenship:								
U.S. Citizen								
Immigrant								
Non-Resident Alien								
District Residency:								
In-District								
All Out-of-District								
Physically Disabled:								
Disadvantaged:								
Limited English:								

Summary Progress Report (Counts and Percentages) for XX Cohort as of XX Term

	Number of Students	Enrolled	Not Enrolled	Suspended/ Dismissed	Not Persisting	First Term Only	Completed	Re-Enrolled
Highest Degree Attained:								
No College Degree								
Associate/Certificate								
Bachelors Degree								
Graduate Degree								
Entering Status:								
New/First-Time Student								
Transfer Student								
Day/Evening Indicator:								
Day								
Evening								
Weekend								
High School Concurrent Flag								
Date of High School Graduation:								
1 Year or Less Ago								
2-5 Years Ago								
More than 5 Years Ago								
Initial Location of Attendance:								
Location A Only								
Location B Only								
Location C Only								
All Other								
Initial Program:								
Transfer								
Occupational								
Other								

Summary Progress Report (Counts and Percentages) for XX Cohort as of XX Term

	Number of Students	Enrolled	Not Enrolled	Suspended/ Dismissed	Not Persisting	First Term Only	Completed	Re-Enrolled
Initial Objective:								
Prepare for New Occupation								
Improve Occupation Skills								
Decide on Career								
Prepare to Transfer								
Remedy Basic Skills								
Personal Interests								
Prepare for GED								
Other/Unknown								
Intended Persistence:								
One or Several Courses								
Certificate (Less than 1 Year)								
Certificate (1 Year or More)								
Associate Degree								
Initial Reading Proficiency:								
Reading 085 or below								
Reading 090								
Reading 091								
Reading 110								
Above Reading 110								
Initial Writing Proficiency Level:								
English 097 or below								
English 098								
English 101								
English 102 or above								
Initial Math Proficiency Level:								
Below Level 1								
Level 1								
Level 2								
Level 3								

Overall Performance Report for XX Cohort as of XX Term

	Number of Students	Total Credits Attempted	Total Credits Earned	Avg. Load (Excluding Summer)	Total Credits Earned Ratio	% Earning Degree/ Certificate	No. Enrolled Terms to Complete	No. Elapsed Terms to Complete
Total								
Gender:								
Male								
Female								
Age:								
Under 18								
18-24								
25-34								
35-44								
45-54								
55 and over								
Ethnicity:								
Asian/Pacific Islander								
American Indian/Alaskan								
Black Non-Hispanic								
Hispanic								
White Non-Hispanic								
Non-Resident Alien								
Citizenship:								
U.S. Citizen								
Immigrant								
Non-Resident Alien								
District Residency:								
In-District								
All Out-of-District								
Physically Disabled:								
Disadvantaged:								
Limited English:								
Highest Degree Attained:								
No College Degree								
Associate/Certificate								
Bachelors Degree								
Graduate Degree								

Overall Performance Report for XX Cohort as of XX Term

	Number of Students	Total Credits Attempted	Total Credits Earned	Avg. Load (Excluding Summer)	Total Credits Earned Ratio	% Earning Degree/ Certificate	No. Enrolled Terms to Complete	No. Elapsed Terms to Complete
Entering Status:								
New/First-Time Student								
Transfer Student								
Day/Evening Indicator:								
Day								
Evening								
Weekend								
High School Concurrent Flag								
Date of High School Graduation:								
1 Year or Less Ago								
2-5 Years Ago								
More than 5 Years Ago								
Initial Location of Attendance:								
Location A Only								
Location B Only								
Location C Only								
All Other								
Initial Program:								
Transfer								
Occupational								
Other								
Initial Objective:								
Prepare for New Occupation								
Improve Occupation Skills								
Decide on Career								
Prepare to Transfer								
Remedy Basic Skills								
Personal Interests								
Prepare for GED								
Other/Unknown								
Intended Persistence:								
One or Several Courses								
Certificate (Less than 1 Year)								
Certificate (1 Year or More)								
Associate Degree								

Overall Performance Report for XX Cohort as of XX Term

	Number of Students	Total Credits Attempted	Total Credits Earned	Avg. Load (Excluding Summer)	Total Credits Earned Ratio	% Earning Degree/ Certificate	No. Enrolled Terms to Complete	No. Elapsed Terms to Complete
Initial Reading Proficiency:								
Reading 085 or below								
Reading 090								
Reading 091								
Reading 110								
Above Reading 110								
Initial Writing Proficiency Level:								
English 097 or below								
English 098								
English 101								
English 102 or above								
Initial Math Proficiency Level:								
Below Level 1								
Level 1								
Level 2								
Level 3								

English/Speech Coursework Status Report for XX Cohort as of XX Term

	Number of Students	English 001				English 002				English 003				Speech 101			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Total																	
Gender:																	
Male																	
Female																	
Age:																	
Under 18																	
18-24																	
25-34																	
35-44																	
45-54																	
55 and over																	
Ethnicity:																	
Asian/Pacific Islander																	
American Indian/ Alaskan																	
Black Non-Hispanic																	
Hispanic																	
White Non-Hispanic																	
Non-Resident Alien																	
Citizenship:																	
U.S. Citizen																	
Immigrant																	
Non-Resident Alien																	
District Residency:																	
In-District																	
All Out-of-District																	
Physically Disabled:																	
Disadvantaged:																	
Limited English:																	
Highest Degree Attained:																	
No College Degree																	
Associate/Certificate																	
Bachelors Degree																	
Graduate Degree																	
Entering Status:																	
New/First-Time Student																	
Transfer Student																	

English/Speech Coursework Status Report for XX Cohort as of XX Term

	Number of Students	English 001				English 002				English 003				Speech 101			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Day/Evening Indicator:																	
Day																	
Evening																	
Weekend																	
High School Concurrent Flag																	
Date of High School Graduation:																	
1 Year or Less Ago																	
2-5 Years Ago																	
More than 5 Years Ago																	
Initial Location of Attendance:																	
Location A Only																	
Location B Only																	
Location C Only																	
All Other																	
Initial Program:																	
Transfer																	
Occupational																	
Other																	
Initial Objective:																	
Prepare for New Occupation																	
Improve Occupation Skills																	
Decide on Career																	
Prepare to Transfer																	
Remedy Basic Skills																	
Personal Interests																	
Prepare for GED																	
Other/Unknown																	
Intended Persistence:																	
One or Several Courses																	
Certificate (Less than 1 Year)																	
Certificate (1 Year or More)																	
Associate Degree																	

English/Speech Coursework Status Report for XX Cohort as of XX Term

	Number of Students	English 001				English 002				English 003				Speech 101			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Initial Reading Proficiency:																	
Reading 000 or below																	
Reading 001																	
Reading 002																	
Reading 003																	
Above Reading 003																	
Initial Writing Proficiency Level:																	
English 001 or below																	
English 002																	
English 003																	
English 004 or above																	
Initial Math Proficiency Level:																	
Below Level 1																	
Level 1																	
Level 2																	
Level 3																	

Reading Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Reading 001				Reading 002				Reading 003			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Total													
Gender:													
Male													
Female													
Age:													
Under 18													
18-24													
25-34													
35-44													
45-54													
55 and over													
Ethnicity:													
Asian/Pacific Islander													
American Indian/Alaskan													
Black Non-Hispanic													
Hispanic													
White Non-Hispanic													
Non-Resident Alien													
Citizenship:													
U.S. Citizen													
Immigrant													
Non-Resident Alien													
District Residency:													
In-District													
All Out-of-District													
Physically Disabled:													
Disadvantaged:													
Limited English:													
Highest Degree Attained:													
No College Degree													
Associate/Certificate													
Bachelors Degree													
Graduate Degree													
Entering Status:													
New/First-Time Student													
Transfer Student													

Reading Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Reading 001				Reading 002				Reading 003			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Day/Evening Indicator:													
Day													
Evening													
Weekend													
High School Concurrent Flag													
Date of High School Graduation:													
1 Year or Less Ago													
2-5 Years Ago													
More than 5 Years Ago													
Initial Location of Attendance:													
Location A Only													
Location B Only													
Location C Only													
All Other													
Initial Program:													
Transfer													
Occupational													
Other													
Initial Objective:													
Prepare for New Occupation													
Improve Occupation Skills													
Decide on Career													
Prepare to Transfer													
Remedy Basic Skills													
Personal Interests													
Prepare for GED													
Other/Unknown													
Intended Persistence:													
One or Several Courses													
Certificate (Less than 1 Year)													
Certificate (1 Year or More)													
Associate Degree													
Initial Reading Proficiency:													
Reading 000 or below													
Reading 001													
Reading 002													
Reading 003													
Above Reading 003													

Reading Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Reading 001				Reading 002				Reading 003			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Initial Writing Proficiency Level:													
English 001 or below													
English 002													
English 003													
English 004 or above													
Initial Math Proficiency Level:													
Below Level 1													
Level 1													
Level 2													
Level 3													

Math Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Math 001				Math 002				Math 003				Math 004			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Total																	
Gender:																	
Male																	
Female																	
Age:																	
Under 18																	
18-24																	
25-34																	
35-44																	
45-54																	
55 and over																	
Ethnicity:																	
Asian/Pacific Islander																	
American Indian/ Alaskan																	
Black Non-Hispanic																	
Hispanic																	
White Non-Hispanic																	
Non-Resident Alien																	
Citizenship:																	
U.S. Citizen																	
Immigrant																	
Non-Resident Alien																	
District Residency:																	
In-District																	
All Out-of-District																	
Physically Disabled:																	
Disadvantaged:																	
Limited English:																	
Highest Degree Attained:																	
No College Degree																	
Associate/Certificate																	
Bachelors Degree																	
Graduate Degree																	
Entering Status:																	
New/First-Time Student																	
Transfer Student																	

Math Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Math 001				Math 002				Math 003				Math 004			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Day/Evening Indicator:																	
Day																	
Evening																	
Weekend																	
High School Concurrent Flag																	
Date of High School Graduation:																	
1 Year or Less Ago																	
2-5 Years Ago																	
More than 5 Years Ago																	
Initial Location of Attendance:																	
Location A Only																	
Location B Only																	
Location C Only																	
All Other																	
Initial Program:																	
Transfer																	
Occupational																	
Other																	
Initial Objective:																	
Prepare for New Occupation																	
Improve Occupation Skills																	
Decide on Career																	
Prepare to Transfer																	
Remedy Basic Skills																	
Personal Interests																	
Prepare for GED																	
Other/Unknown																	
Intended Persistence:																	
One or Several Courses																	
Certificate (Less than 1 Year)																	
Certificate (1 Year or More)																	
Associate Degree																	

Math Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Math 001				Math 002				Math 003				Math 004			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Initial Reading Proficiency:																	
Reading 000 or below																	
Reading 001																	
Reading 002																	
Reading 003																	
Above Reading 003																	
Initial Writing Proficiency Level:																	
English 001 or below																	
English 002																	
English 003																	
English 004 or above																	
Initial Math Proficiency Level:																	
Below Level 1																	
Level 1																	
Level 2																	
Level 3																	

Math Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Math 005				Math 006				Math 007				Math 008			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Total																	
Gender:																	
Male																	
Female																	
Age:																	
Under 18																	
18-24																	
25-34																	
35-44																	
45-54																	
55 and over																	
Ethnicity:																	
Asian/Pacific Islander																	
American Indian/ Alaskan																	
Black Non-Hispanic																	
Hispanic																	
White Non-Hispanic																	
Non-Resident Alien																	
Citizenship:																	
U.S. Citizen																	
Immigrant																	
Non-Resident Alien																	
District Residency:																	
In-District																	
All Out-of-District																	
Physically Disabled:																	
Disadvantaged:																	
Limited English:																	
Highest Degree Attained:																	
No College Degree																	
Associate/Certificate																	
Bachelors Degree																	
Graduate Degree																	
Entering Status:																	
New/First-Time Student																	
Transfer Student																	

Math Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Math 005				Math 006				Math 007				Math 008			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Day/Evening Indicator:																	
Day																	
Evening																	
Weekend																	
High School Concurrent Flag																	
Date of High School Graduation:																	
1 Year or Less Ago																	
2-5 Years Ago																	
More than 5 Years Ago																	
Initial Location of Attendance:																	
Location A Only																	
Location B Only																	
Location C Only																	
All Other																	
Initial Program:																	
Transfer																	
Occupational																	
Other																	
Initial Objective:																	
Prepare for New Occupation																	
Improve Occupation Skills																	
Decide on Career																	
Prepare to Transfer																	
Remedy Basic Skills																	
Personal Interests																	
Prepare for GED																	
Other/Unknown																	
Intended Persistence:																	
One or Several Courses																	
Certificate (Less than 1 Year)																	
Certificate (1 Year or More)																	
Associate Degree																	

Math Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Math 005				Math 006				Math 007				Math 008			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Initial Reading Proficiency:																	
Reading 000 or below																	
Reading 001																	
Reading 002																	
Reading 003																	
Above Reading 003																	
Initial Writing Proficiency Level:																	
English 001 or below																	
English 002																	
English 003																	
English 004 or above																	
Initial Math Proficiency Level:																	
Below Level 1																	
Level 1																	
Level 2																	
Level 3																	

Business Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Business 100				Business 101				Accounting 101				Secretarial Sci. 101			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Total																	
Gender:																	
Male																	
Female																	
Age:																	
Under 18																	
18-24																	
25-34																	
35-44																	
45-54																	
55 and over																	
Ethnicity:																	
Asian/Pacific Islander																	
American Indian/ Alaskan																	
Black Non-Hispanic																	
Hispanic																	
White Non-Hispanic																	
Non-Resident Alien																	
Citizenship:																	
U.S. Citizen																	
Immigrant																	
Non-Resident Alien																	
District Residency:																	
In-District																	
All Out-of-District																	
Physically Disabled:																	
Disadvantaged:																	
Limited English:																	
Highest Degree Attained:																	
No College Degree																	
Associate/Certificate																	
Bachelors Degree																	
Graduate Degree																	
Entering Status:																	
New/First-Time Student																	
Transfer Student																	

Business Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Business 100				Business 101				Accounting 101				Secretarial Sci. 101			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Day/Evening Indicator:																	
Day																	
Evening																	
Weekend																	
High School Concurrent Flag																	
Date of High School Graduation:																	
1 Year or Less Ago																	
2-5 Years Ago																	
More than 5 Years Ago																	
Initial Location of Attendance:																	
Location A Only																	
Location B Only																	
Location C Only																	
All Other																	
Initial Program:																	
Transfer																	
Occupational																	
Other																	
Initial Objective:																	
Prepare for New Occupation																	
Improve Occupation Skills																	
Decide on Career																	
Prepare to Transfer																	
Remedy Basic Skills																	
Personal Interests																	
Prepare for GED																	
Other/Unknown																	
Intended Persistence:																	
One or Several Courses																	
Certificate (Less than 1 Year)																	
Certificate (1 Year or More)																	
Associate Degree																	

Business Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Business 100				Business 101				Accounting 101				Secretarial Sci. 101			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Initial Reading Proficiency:																	
Reading 000 or below																	
Reading 001																	
Reading 002																	
Reading 003																	
Above Reading 003																	
Initial Writing Proficiency Level:																	
English 001 or below																	
English 002																	
English 003																	
English 004 or above																	
Initial Math Proficiency Level:																	
Below Level 1																	
Level 1																	
Level 2																	
Level 3																	

Social Sciences Coursework Status Report for XX Cohort as of XX Term

		Psychology 100				Sociology 100			
	Number of Students	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Total									
Gender:									
Male									
Female									
Age:									
Under 18									
18-24									
25-34									
35-44									
45-54									
55 and over									
Ethnicity:									
Asian/Pacific Islander									
American Indian/Alaskan									
Black Non-Hispanic									
Hispanic									
White Non-Hispanic									
Non-Resident Alien									
Citizenship:									
U.S. Citizen									
Immigrant									
Non-Resident Alien									
District Residency:									
In-District									
All Out-of-District									
Physically Disabled:									
Disadvantaged:									
Limited English:									
Highest Degree Attained:									
No College Degree									
Associate/Certificate									
Bachelors Degree									
Graduate Degree									
Entering Status:									
New/First-Time Student									
Transfer Student									

Social Sciences Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Psychology 100				Sociology 100			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Day/Evening Indicator:									
Day									
Evening									
Weekend									
High School Concurrent Flag									
Date of High School Graduation:									
1 Year or Less Ago									
2-5 Years Ago									
More than 5 Years Ago									
Initial Location of Attendance:									
Location A Only									
Location B Only									
Location C Only									
All Other									
Initial Program:									
Transfer									
Occupational									
Other									
Initial Objective:									
Prepare for New Occupation									
Improve Occupation Skills									
Decide on Career									
Prepare to Transfer									
Remedy Basic Skills									
Personal Interests									
Prepare for GED									
Other/Unknown									
Intended Persistence:									
One or Several Courses									
Certificate (Less than 1 Year)									
Certificate (1 Year or More)									
Associate Degree									
Initial Reading Proficiency:									
Reading 000 or below									
Reading 001									
Reading 002									
Reading 003									
Above Reading 003									

Social Sciences Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Psychology 100				Sociology 100			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Initial Writing Proficiency Level:									
English 001 or below									
English 002									
English 003									
English 004 or above									
Initial Math Proficiency Level:									
Below Level 1									
Level 1									
Level 2									
Level 3									

Sciences Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Chemistry 100				Chemistry 101				Biology 100			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Total													
Gender:													
Male													
Female													
Age:													
Under 18													
18-24													
25-34													
35-44													
45-54													
55 and over													
Ethnicity:													
Asian/Pacific Islander													
American Indian/Alaskan													
Black Non-Hispanic													
Hispanic													
White Non-Hispanic													
Non-Resident Alien													
Citizenship:													
U.S. Citizen													
Immigrant													
Non-Resident Alien													
District Residency:													
In-District													
All Out-of-District													
Physically Disabled:													
Disadvantaged:													
Limited English:													
Highest Degree Attained:													
No College Degree													
Associate/Certificate													
Bachelors Degree													
Graduate Degree													
Entering Status:													
New/First-Time Student													
Transfer Student													

Sciences Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Chemistry 100				Chemistry 101				Biology 100			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Day/Evening Indicator:													
Day													
Evening													
Weekend													
High School Concurrent Flag													
Date of High School Graduation:													
1 Year or Less Ago													
2-5 Years Ago													
More than 5 Years Ago													
Initial Location of Attendance:													
Location A Only													
Location B Only													
Location C Only													
All Other													
Initial Program:													
Transfer													
Occupational													
Other													
Initial Objective:													
Prepare for New Occupation													
Improve Occupation Skills													
Decide on Career													
Prepare to Transfer													
Remedy Basic Skills													
Personal Interests													
Prepare for GED													
Other/Unknown													
Intended Persistence:													
One or Several Courses													
Certificate (Less than 1 Year)													
Certificate (1 Year or More)													
Associate Degree													
Initial Reading Proficiency:													
Reading 000 or below													
Reading 001													
Reading 002													
Reading 003													
Above Reading 003													

Sciences Coursework Status Report for XX Cohort as of XX Term

	Number of Students	Chemistry 100				Chemistry 101				Biology 100			
		% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade	% Enrolling	% Retaking	% Completing	Avg. Grade
Initial Writing Proficiency Level:													
English 001 or below													
English 002													
English 003													
English 004 or above													
Initial Math Proficiency Level:													
Below Level 1													
Level 1													
Level 2													
Level 3													

Reading Coursework Placement/Effectiveness Report for XX Cohort as of XX Term

	Number of Students	% Now Proficient Above 110	Reading 000		Reading 001		Reading 002		Reading 003	
			% Enrolling	Avg. Grade	% Enrolling	Avg. Grade	% Enrolling	Avg. Grade	% Enrolling	Avg. Grade
All Students										
Initial Proficiency Level (Reading):										
Reading 000 or below										
Reading 001										
Reading 002										
Reading 003										
Above Reading 003										
Not Assessed:										

Writing Coursework Placement/Effectiveness Report for XX Cohort as of XX Term

	Number of Students	% Now Proficient Above 110	English 001		English 002		English 003	
			% Enrolling	Avg. Grade	% Enrolling	Avg. Grade	% Enrolling	Avg. Grade
All Students								
Initial Proficiency Level (Writing):								
English 001 or below								
English 002								
English 003								
English 004 or above								
Not Assessed:								

Initial Math Coursework Placement/Effectiveness Report for XX Cohort as of XX Term

	Number of Students	% Now Proficient Above 110	Math 001		Math 002		Math 003	
			% Enrolling	Avg. Grade	% Enrolling	Avg. Grade	% Enrolling	Avg. Grade
All Students								
Initial Proficiency Level (Math):								
Below Level 1								
Level 1								
Level 2								
Level 3								
Not Assessed:								

Later Math Coursework Placement/Effectiveness Report for XX Cohort as of XX Term

	Number of Students	% Now Proficient Above 110	Math 005		Math 006		Math 007		Math 008	
			% Enrolling	Avg. Grade	% Enrolling	Avg. Grade	% Enrolling	Avg. Grade	% Enrolling	Avg. Grade
All Students										
Initial Proficiency Level (Math):										
Below Level 1										
Level 1										
Level 2										
Level 3										
Not Assessed:										

Overall Coursework Placement/Effectiveness Report for XX Cohort as of XX Term

	Number of Students	Business 100		..... [all other courses in database] .....
		% Enrolling	Avg. Grade	
All Students				
Initial Proficiency Level (Math):				
Initial Reading Proficiency:				
Reading 000 or below				
Reading 001				
Reading 002				
Reading 003				
Above Reading 003				
Initial Writing Proficiency Level:				
English 001 or below				
English 002				
English 003				
English 004 or above				
Initial Math Proficiency Level:				
Below Level 1				
Level 1				
Level 2				
Level 3				
Not Assessed				

High School Feedback Report for XX Cohort as of XX Term

	Number of Students	% Enrolled	% Completed	% First Term Only	English Placement Level		Math Placement Level		GPA	Overall Credit Earned Ratio
					College	Below College	College	Below College		
Total										
High School #1:										
Total										
Years Since H.S. Graduation:										
Less than 2 Yrs										
2-5 Yrs										
More than 5 Yrs										
High School #2:										
Total										
Years Since H.S. Graduation:										
Less than 2 Yrs										
2-5 Yrs										
More than 5 Yrs										
[etc.]										

Institutional Unit Transfer Report for XX Cohort as of XX Term

	Number of Students	Enrolled	Completed	First Term Only	Average Load	SCH Completion Ratio	Overall GPA
Main Campus:							
Total							
0-15 SCH Transferred							
16-30 SCH Transferred							
31-60 SCH Transferred							
Over 60 SCH Transferred							
Branch Campus:							
Total							
0-15 SCH Transferred							
16-30 SCH Transferred							
31-60 SCH Transferred							
Over 60 SCH Transferred							
Community College One:							
Total							
0-15 SCH Transferred							
16-30 SCH Transferred							
31-60 SCH Transferred							
Over 60 SCH Transferred							
Community College Two:							
Total							
0-15 SCH Transferred							
16-30 SCH Transferred							
31-60 SCH Transferred							
Over 60 SCH Transferred							
Community College Three:							
Total							
0-15 SCH Transferred							
16-30 SCH Transferred							
31-60 SCH Transferred							
Over 60 SCH Transferred							
Community College Four:							
Total							
0-15 SCH Transferred							
16-30 SCH Transferred							
31-60 SCH Transferred							
Over 60 SCH Transferred							
Community College Five:							
Total							
0-15 SCH Transferred							
16-30 SCH Transferred							
31-60 SCH Transferred							
Over 60 SCH Transferred							

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